Kelly Thomas
Environmental Scientist

June 20, 2016

Mr. Jeffrey Kimble
On-Scene Coordinator
U.S. Environmental Protection Agency Region 5
9311 Groh Road
Grosse Ile, Michigan 48318

Subject: **Draft Removal Report –Michner Plating Mechanic Street Removal**
EPA Contract No. EP-S5-13-01
Technical Direction Document No. S05-0001-1508-202
Document Tracking No. 0705

Dear Mr. Kimble:

Tetra Tech, Inc. (Tetra Tech) is submitting the draft removal report for the Michner Plating Mechanic Street site. This report summarizes removal action activities conducted from August 2015 through April 2016. If you have any questions regarding this report, please call me at (313) 574-3176.

Sincerely,

Kelly D Thomas

Kelly Thomas
Environmental Scientist

Enclosure

cc: Kevin Scott, Tetra Tech Program Manager
TDD File

Tetra Tech, Inc.
25213 Dequindre Road, Madison Heights, Michigan
Tel 248.721.8001 | Fax 248.399.0021
www.tetratech.com

DRAFT REMOVAL REPORT
MICHNER PLATING MECHANIC STREET SITE
JACKSON, JACKSON COUNTY, MICHIGAN

Prepared for

U.S. Environmental Protection Agency
Emergency Response Branch
Region 5
9311 Groh Road
Grosse Ile, MI 48318

Submitted by

Tetra Tech, Inc.
25213 Dequindre Road
Madison Heights, MI 48071

EPA Contract No. EP-S5-13-01

Technical Direction Document No. S05-0001-1508-202
Document Tracking No. 0705

June 20, 2016

Prepared by

Kelly Thomas
Environmental Scientist

Approved by

John Dirgo
START QC Reviewer

CONTENTS

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked Tetra Tech, Inc. (Tetra Tech) to provide oversight and technical support for removal action activities at the Michner Plating Mechanic Street Site in Jackson, Jackson County, Michigan. This work was assigned under Superfund Technical Assessment and Response Team (START) Contract No. EP-S5-13-01, Technical Direction Document (TDD) No. S05-0001-1508-202. Specifically, EPA tasked Tetra Tech to perform the following activities:

- Provide written and photographic documentation of site conditions and activities
- Manage site files and information
- Provide information needed to prepare EPA Pollution Reports (POLREP)
- Provide technical support to the EPA On-Scene Coordinator (OSC)
- Collaborate with the U.S. Coast Guard (USCG) Atlantic Strike Team to provide real-time air monitoring to document the levels of hydrogen sulfide (H_2S), carbon monoxide (CO), flammable vapors (percent lower explosive limit [LEL]), volatile organic compounds (VOCs), and hydrogen cyanide (HCN) in the ambient air within the site buildings and around the perimeter
- Perform oversight of activities conducted by the Emergency and Rapid Response Services (ERRS) contractor, which included:
  - Developing site support documents
  - Setting up a command post, contamination reduction zone (CRZ), and exclusion zone (EZ)
  - Staging drums and containers, sampling, and conducting hazard categorization and waste bulking
  - Conducting off-site transport and disposal of waste materials
- Develop a report summarizing removal activities
- Track costs related to oversight and report preparation

These activities were performed as part of an EPA time-critical removal for the Michner Plating Mechanic Street Site. The purpose of the removal was to mitigate any imminent and substantial threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the site. In addition, EPA conducted air monitoring during removal activities to ensure the safety of on-site workers and to ensure—through engineering and site controls—that potential fugitive emissions did not migrate off site, adversely affecting neighboring residential and commercial areas.

This report documents removal activities that took place at the Michner Plating Mechanic Street Site from August 2015 through April 2016. Specifically, this report discusses the site's location, background, and history in Section 2.0; summarizes removal action activities in Section 3.0; provides air monitoring results

in Section 4.0; and describes the effectiveness of the removal activities and presents conclusions in Sections 5.0 and 6.0. References cited in the report are listed after the text.

In addition, Appendix A includes site figures (Figures 1 and 2); Appendix B includes a waste manifest table; Appendix C is the photographic documentation log; and Appendix D provides written documentation of site activities in START's field notes.

2.0 SITE BACKGROUND

This section describes the site's location, presents a site description, and summarizes the history of the site.

2.1 SITE LOCATION

The Michner Plating Mechanic Street Site is located at 520 North Mechanic Street, Jackson, Jackson County, Michigan (Figure 1). The geographic coordinates of the site are 42º15'15.1128'' North and 84º24'21.9240'' West. The site is located within a mixed commercial and residential area and is bounded to the north by a commercial property; to the east by North Mechanic Street with commercial properties beyond; to the south by West Trail Street with commercial properties beyond; and to the west by a railroad and the Grand River. Residences are located approximately 250 feet east of site. Figure 2 in Appendix A presents an aerial photograph of the site and labels general site features.

2.2 SITE DESCRIPTION

The site comprises approximately 4 acres and contains two buildings and two garages totaling 137,000 square feet that were constructed between 1930 and 1940. The site was historically occupied by Michner Plating Company, which ran various processes, including dacromet and powder coating and nickel, chromium, and zinc plating. The main building is located in the northern portion of the site and previously contained four main plating areas. The plating lines have been removed, and the vats associated with the plating lines were located throughout the building. The southern building contained three stories, a basement, and a sub-basement. The site is no longer active, and plating operations ceased around 2007.

During the removal activities, one of the garages in the central portion of the site was used for personal protective equipment (PPE) storage and as a break area. Hazard categorization (HazCat) activities were initially conducted in the EPA HazCat trailer, which was staged in the central portion of the site, with additional sample storage located in the second garage. The EPA HazCat trailer was mobilized to another EPA Region 5 removal site on October 2, 2015, and hazard categorization and sample storage were

relocated to the southeastern portion of the main building. The southern portion of the main building was used as a decontamination area and CRZ. The remaining portions of the main building and the entire southern building were identified as exclusion zones.

Personnel accessed the site from the asphalt parking lot in the central portion of the site. Overnight security was on site during non-working hours from August until December 2015. After December 2015, access doors were locked or boarded up during non-working hours.

2.3 SITE HISTORY

The site was occupied by a plating shop from approximately 1936 until 2007. The main plating operations occurred in the northern building and included dacromet, powder coating and nickel, chromium, and zinc plating. The southern building was used for offices. At the start of the removal activities, a portion of the southern building was occupied by Salco, a welding business that was leasing part of the site and was active at the time the property was seized through foreclosure. Salco vacated the building at the start of the removal activities.

On June 2 and 3, 2015, EPA and Tetra Tech START mobilized to the site to conduct a site assessment to document site conditions, inventory drums and containers, and collect samples. Tetra Tech START identified approximately 1,100 drums, vats, totes, and other containers located in the northern building, and approximately 100 additional containers located in the southern building. Labels on the containers indicated the potential presence of hydrogen peroxide, acetic acid, hydrochloric acid, chromic acid, sulfuric acid, sodium hydroxide, barium carbonate, zinc cyanide, nickel chloride, cadmium powder, and other chemicals. Many of the containers showed signs of corrosion and deterioration caused by water that had leaked through the building's damaged roof. The doors and walls of the northern building were not secure, and evidence of trespassing was observed throughout the building. Additionally, evidence was observed indicating that some waste materials and equipment, including plating lines and scrap metal, had been removed from the building.

Tetra Tech START collected eight waste samples from containers and two samples of sludge material from the floor in the northern building during the site assessment. Analytical results identified the presence of metals, cyanide, acids, ignitable wastes, reactive wastes (including water reactive compounds), and other chemicals, with pH as low as 0.4 standard units (S.U.), flashpoint as low as 71.9 ºF, and hazardous concentrations of cadmium (up to 51,700 milligrams per kilogram [mg.kg]), chromium (up to 259,900 mg/kg), lead (up to 18.2 mg/kg), mercury (up to 10.4 mg/kg), and silver (up to 16.6 mg/kg).

The wastes at the site were determined to pose a potential threat of release and a substantial threat to public health or welfare or the environment based on the uncontrolled site access and the proximity of the site to sensitive receptors (including residences and waterways). EPA concluded that a time-critical removal action was warranted at the site to mitigate threats to public health, welfare, and the environment (Tetra Tech 2015a).

3.0 REMOVAL ACTION ACTIVITIES

On-site removal activities began on August 25, 2015, and were completed in April 2016. Prior to the start of the removal action, the ERRS contractor developed a site-specific health and safety plan (HASP) (Lata-Kemrom 2015), which was reviewed by the EPA OSC, Tetra Tech START, and USCG. The HASP detailed site hazards (including site-related contaminants of concern), air monitoring requirements, action levels during work activities, and health and safety protocols for each task to be performed at the site. The HASP also described proper PPE to be used on a task-by-task basis, as well as emergency procedures related to on-site work. Two amendments to the HASP were submitted to EPA as additional hazards were identified. Each HASP amendment was reviewed by the EPA OSC and Tetra Tech START prior to implementation.

Tetra Tech START developed the site-specific Emergency Contingency Plan (ECP) dated September 2, 2015 (Tetra Tech 2015b), and Air Monitoring Plan (AMP) dated September 8, 2015 (Tetra Tech 2015c). The ECP identified additional emergency procedures related to on-site work activities, medical emergencies, fire, or explosion, and local contacts in case of emergency. The AMP identified site-related contaminants of concern, air monitoring equipment, and techniques that were used by Tetra Tech START and USCG Atlantic Strike Team. Once approved, the plans were implemented throughout the removal, and activities were conducted under the direction of the on-site EPA OSC and the ERRS removal manager (RM). Tetra Tech START personnel photographed and documented site activities in a logbook in accordance with Tetra Tech Standard Operating Procedure (SOP) No. 024, "Recording Notes in Field Logbooks" (Tetra Tech 2014), and Tetra Tech's QAPP for START (Tetra Tech 2015d).

The following sections discuss activities completed as part of this removal action.

3.1 INITIAL SITE SETUP

On August 25, 2015, EPA, Tetra Tech START, and ERRS personnel mobilized to the site to initiate the removal action. USCG members mobilized to the site on August 31. Between August 25 and August 28, 2015, the crew completed activities to demarcate the EZ, CRZ, command post, and decontamination area. These activities included clearing debris (wood pallets, trash, and empty drums) from the central parking area and the northern building.

The EZ included all areas where removal activities would occur, including the entire southern building and the northern portions of the northern building. The CRZ and decontamination area were set up in the southern portion of the northern building and contained receptacles for the disposal of PPE and sampling materials used during removal activities. A command post was set up in the central parking area. The command post housed trailers, support supplies, and personal vehicles. The ERRS contractor set up four office trailers, one for the EPA OSC and USCG, one for EPA support staff and Tetra Tech START, and two for ERRS personnel and overnight security. The ERRS contractor procured a local electrician to initially connect power for the trailers using a large, on-site diesel generator. On October 2, 2015, the office trailers were connected to Consumers Energy power lines.

3.2 WASTE MATERIAL SAMPLING

Beginning on September 1, 2015, the crew gathered drums and containers located throughout the site and staged them in the central rooms of the northern building for sampling. Additional containers, including pits, large vats, and aboveground storage tanks (ASTs), were located throughout the site and could not be moved into the staging area, so they were sampled in place. ERRS crew members completed inventory logs for each container, which included a description of the physical characteristics of the container (type, size, and condition), contents (color, state, and clarity), and any additional relevant information (including labels and markings on the container). The crew assigned each container a unique identification number, which was recorded on the container, the inventory log, and the sample jar. Tetra Tech START photographed each container as it was sampled.

Liquid samples were collected using disposable drum thieves. If stratified layers were present, the thickness and characteristics of each layer were noted on the container inventory log, and each layer was placed into separate 4-ounce sample jars. Solid and sludge samples were collected using disposable scoops and placed directly into sample jars. Some containers were open or so deteriorated that the contents were exposed; however, others required unfastening the collar, opening the bung hole, or using a drum deheader (a device similar to a large can opener) to open. The ERRS crew opened and sampled each container in Level B PPE because of the unknown contents.

The ERRS crew collected a total of 1,033 samples from drums, totes, buckets, and bags; 15 samples from pits; 12 samples from ASTs; and 73 samples from plastic and steel vats.

All samples underwent field categorization to assess hazardous characteristics and to determine the compatibility for waste consolidation. Samples underwent field categorization to classify the wastes based on flammability, water and hexane solubility, pH, and the presence of halogens, oxidizers, cyanide, and

sulfide in the materials. Flammability was assessed by applying fire to a cotton swab soaked in the material. A Bielstein test was conducted with the flammability test to determine the presence of halogenated organic hydrocarbons. The Bielstein test was conducted by applying the unknown liquid or solid to a copper ring, and then applying fire. A blue or green flame would indicate the presence of halogenated organic hydrocarbons. Water and hexane solubility tests were completed by attempting to mix the unknown liquid or solid in water or hexane.

The pH test was completed by applying the material to a sheet of pH paper. The oxidizer test was completed using potassium iodide paper. A small amount of acid (2 or 3 drops) was used to wet the paper, and then the sample was touched to the paper. A color change to black, blue, or purple indicated the material is an oxidizer. The cyanide test was completed by adding a small amount of the material to approximately 5 milliliters (mL) of ferrous ammonium citrate solution in a test tube. Approximately 5 mL of ferrous ammonium sulfate was then added to the test tube with 3 to 5 drops of acid. A color change to blue indicated the presence of cyanide. The sulfide tests was completed by applying a drop of the unknown material to a piece of wet lead acetate paper. A color change to brown, black, or silver indicated the presence of reactive sulfide.

Hazard categorization tests identified waste streams including neutral solids and liquids, flammable liquids, oxidizing solids, alkaline solids and liquids, cyanide solids and liquids, and acidic liquids. Based on the results of the hazard categorization, the ERRS chemist sorted the containers into groups of compatible materials for waste bulking.

3.3 BENCH TESTING AND WASTE CONSOLIDATION

On September 23, the ERRS chemist initiated bench-scale compatibility tests using the sampled materials. The purpose of the bench-scale testing was to ensure that no incompatibilities existed in the waste streams before large-scale waste bulking. Bench-scale testing was completed by taking a portion of sample from each container in the waste stream and combining it in an open bucket to observe for reactions or other signs of incompatibilities.

Once a waste stream was identified and bench testing showed no signs of incompatibility, the crew began large-scale waste consolidation. As a result of the large number of samples, bench-scale compatibility testing was initiated before all the hazard categorization had been completed. As additional samples were categorized, the materials were added to the appropriate waste stream if bench testing had already been completed.

Beginning on October 2, the crew consolidated and repackaged waste materials into new drums, totes, and cubic yard boxes based on the results of hazard categorization and bench-scale compatibility tests. Because the original containers were deteriorated, none were deemed fit for shipment, and all waste materials on site were transferred to new containers. Most of the waste consolidation activities were completed in the central and northern rooms in the northern building. Liquids were transferred using hand pumps and electric pumps. Solids and sludge were transferred using a combination of shovels, axes, a jackhammer, mini excavator, and skid steer.

As a result of the age of some of the waste materials, many of the containers held very hard solid materials that could not be removed from the original container to be repackaged. When these materials were encountered, the crew placed the entire container into overpacks. Additionally, in light of the highly toxic nature of the materials, a total of 21 containers with cyanide pillows/bricks, hydrogen peroxide, reactive sulfides, metal slag, or sodium dithionite were placed directly into separate overpacks without attempting to open and repackage them.

Wastes from approximately 40 containers with nonhazardous neutral solid materials were transferred and consolidated directly in a poly-lined roll-off dumpster using a mini excavator and skid steer, and wastes from approximately 50 containers with neutral solids with hazardous concentrations of metals were transferred and consolidated in a separate poly-lined roll-off dumpster.

After the waste was consolidated, the ERRS chemist collected a sample from each waste stream to be submitted for laboratory analysis. The samples were submitted to an ERRS-procured laboratory and were analyzed for waste characterization parameters. Based on the analytical results from the off-site laboratory, the wastes were categorized into Department of Transportation (DOT) Hazard Classes and assigned appropriate Resource Conservation and Recovery Act (RCRA) waste codes for transport and disposal.

Approximately 200 smaller containers (less than 5 gallons each) were also identified at the site. Most of the containers were labeled, with the contents identified as acids, bases, pH indicator liquids, or paints. Minimal hazard categorization was completed for these smaller containers, and the materials were added directly into repackaged containers with the appropriate waste streams.

3.4 TRANSPORT AND DISPOSAL

Between November 18, 2015, and April 14, 2016, waste materials were transported off site for disposal at various waste facilities. Details of the various disposal methods are provided below, and a table listing the disposal locations, amounts, and manifest numbers is located in Appendix B.

3.4.1 Repackaged Drums and Other Containers

Most of the waste materials on site were transported off site after they had been consolidated and repackaged in new drums, totes, and cubic yard boxes. Approximately 11,500 pounds of waste cyanide (including zinc and sodium cyanides); 90 gallons of waste flammable liquids; and 35 pounds of waste flammable aerosols were transported off site for disposal at Ross Incineration Services located at 36790 Giles Road, Grafton, Ohio.

Approximately 275 gallons of waste multiphase liquid; 30 gallons of waste motor oil; 250 gallons of waste sulfuric acid; 250 gallons of waste nitric acid; 3,800 gallons of waste flammable liquids; 8,500 gallons of waste corrosive liquids (including acidic, toxic, and flammable liquids); and 9,000 pounds of hazardous waste solids and 1,600 gallons of hazardous waste liquids (with hazardous concentrations of metals) were transported off site for disposal at Petro-Chem Processing Group, LLC, located at 421 Lycaste Street, Detroit, Michigan.

Approximately 70,000 pounds of waste alkaline solids; 60 pounds of waste toxic solids; 300 gallons of waste hypochlorite solutions; 70 gallons of waste hydrogen peroxide; 1,200 pounds of waste carbon black; 2,400 gallons of waste corrosive liquids (including acidic and basic liquids); 500 pounds of waste corrosive solids (basic); and 65,000 pounds of hazardous waste solids and 1,830 gallons of hazardous waste liquids (with hazardous concentrations of metals) were transported off site for disposal at EQ Detroit, located at 1923 Frederick Street, Detroit, Michigan.

Approximately 100 pounds of waste sodium dithionite, a water reactive chemical, was transported off site for disposal at Heritage Environmental Services located at 7901 West Morris Street, Indianapolis, Indiana.

Approximately 2,600 gallons of waste corrosive liquid and 16,500 pounds of waste corrosive solid (basic) was transported off site for disposal at Michigan Disposal Waste Treatment located at 49350 North I-94 Service Drive, Belleville, Michigan.

3.4.2 Roll-off Dumpsters

As a result of the large amount of material in the waste streams, some nonhazardous and hazardous neutral waste solids were not repackaged into new drums; however, the waste streams were transferred and consolidated directly into separate roll-off dumpsters. Approximately 40 containers with 11.64 tons of nonhazardous neutral waste solids were consolidated in a roll-off dumpster, which was transported off site on February 26, 2016, for disposal at C&C Landfill located at 14800 P Drive North, Marshall, Michigan.

Additionally, a roll-off dumpster with approximately 20 tons of hazardous waste solids with hazardous concentrations of metals was transported off site for disposal at EQ Detroit on March 17, 2016.

3.4.3 Empty Containers

After the wastes had been repackaged, empty drums and other containers were cut or crushed. The containers had small amounts of residual waste material and were disposed of as hazardous waste. A total of seven roll-off dumpsters containing approximately 140 cubic yards of empty drums and debris were transported off site between November 18, 2015, and March 17, 2016. The roll-off dumpsters were transported for disposal at Michigan Disposal Waste Treatment in Belleville, Michigan.

3.4.4 Waste Pit Liquids

On March 9 and 10, 2016, pit water was pumped out of pits P001 through P005 directly into vacuum trucks. Approximately 13,300 gallons of waste pit water was pumped out of pits P002 through P004 and was transported for disposal at Disposal Recycling Technologies, Inc., located at 8847 Lyndon Street, Detroit, Michigan; approximately 6,400 gallons of waste tank water was pumped out of pit P005 and was transported off site for disposal at EQ Detroit; and approximately 4,200 gallons of hazardous waste liquid was pumped out of pit P001 and was transported for disposal at Michigan Disposal Waste Treatment in Belleville, Michigan.

Additionally, on April 13, 2016, the crew pumped waste corrosive liquid from several totes and pits directly into a vacuum truck. Approximately 2,200 gallons of waste corrosive liquid (basic) was pumped out of the containers and transported off site for disposal at Waste Management – Vickery Environmental, located at 3956 State Route 412, Vickery, Ohio.

4.0 AIR MONITORING

Real-time air monitoring was carried out by Tetra Tech START and USCG Atlantic Strike Team during all activities, as described in the Tetra Tech AMP. START and USCG used a combination of MultiRAEs, AreaRAEs, and ERRS' HCN personal monitors to assess air quality during container sampling and waste consolidation. Three AreaRAEs were deployed at the northern building's exits and in the CRZ. A fourth AreaRAE was initially staged at the southern exit of the southern building while crews were moving and sampling containers in the building. After these activities were completed in the southern building, the AreaRAE was moved and deployed in the work area of the northern building. One USCG or Tetra Tech START member also conducted air monitoring in the exclusion zone with a MultiRAE during all ERRS crew activities to ensure the safety of workers.

Concentrations of VOCs, HCN, H_2S, and LEL did not exceed the site action levels at the building's exits and in the CRZ throughout the removal activities. Carbon monoxide was detected several times throughout the removal activities at concentrations above the action level in the CRZ; the higher CO concentrations were associated with site equipment. After each exceedance, activities ceased to allow for proper ventilation to mitigate the buildup of CO, and scrubbers were installed on equipment exhausts.

Concentrations of VOCs and HCN were detected in the work zone several times during container sampling. All sampling activities were conducted in Level B PPE based on the unknown nature of the wastes on site; therefore, no change to PPE levels was required during sampling activities. Waste consolidation was initially conducted in Level C PPE. However, VOCs were detected several times above the site action level of 50 parts per million (ppm) during consolidation of the flammable materials waste stream. The exceedances were generally sustained for less than 5 minutes and dissipated after the initial opening of each waste container. However, when the elevated level was sustained for greater than 5 minutes, the crew upgraded to Level B PPE to consolidate this waste stream. Additionally, HCN was detected above the site action level of 4.7 ppm during consolidation of the acidic liquid waste stream and the cyanide solids waste stream. After consultation between the EPA OSC, ERRS RM, Tetra Tech START, and USCG, the crew members upgraded to Level B PPE during consolidation and transfer of these waste streams. The action levels were not exceeded during consolidation of the other waste streams, and the remaining consolidation activities were conducted in Level C PPE.

USCG deployed a DataRAM 4000 outside the exclusion zone to collect background particulate readings for 3 days between August 31 and September 2, 2016. The maximum recorded particulate dust reading did not exceed the action level set by EPA, and no visible dust was observed. No additional particulate monitoring was conducted during the removal action.

5.0 EFFECTIVENESS OF REMOVAL ACTIVITIES

The time-critical removal action successfully addressed immediate hazards identified at the site and mitigated imminent and substantial threats to human health and the environment posed by uncontrolled hazardous waste at the site.

Several additional potential sources of waste were not addressed in this time-critical removal and will remain at the site. These sources include:

- Buried chromium waste that was reportedly covered over with concrete pavement in the central parking area

- A former diesel underground storage tank (UST) located in the western portion of the northern building that was reportedly filled with chromium waste
- Three pole-mounted electrical transformers in the central parking area potentially containing polychlorinated biphenyl (PCB) fluid
- Floor sludge in the central room of the northern building underneath large steel vats that could not be moved during the removal activities
- Sludge and residual liquid at the bottom of pits, tanks, and vats.

Additionally, the concrete floors and other structures inside the building likely contain extensive contamination. Damaged concrete floors in the central and eastern portions of the building are also a potential source of soil or groundwater contamination, which was not investigated as a part of this removal action. One tank containing approximately 2,000 gallons of nonhazardous sand will also remain on site.

Coordination between the EPA OSC and the State of Michigan and EPA Remedial Branch to initiate further investigation is ongoing.

6.0 CONCLUSIONS

The immediate risk to public health or the environment from direct contact or exposure to potentially uncontrolled hazardous and non-hazardous waste liquids and solids from the site has been eliminated through collection, identification, and proper disposal of wastes identified at the Michner Plating Mechanic Street site.

The scope of work for this removal action was to remove, transport, and dispose potentially uncontrolled hazardous waste at EPA-approved disposal facilities in accordance with EPA Off-site Rule (40 Code of Federal Regulations [CFR] Part 300.440) and to take any necessary response actions to address the release or threatened release of a hazardous substance, pollutant, or contaminant that EPA determined may pose an imminent and substantial endangerment to public health or the environment.

Approximate quantities of waste removed from the site included:

- 11,500 pounds of waste cyanide (including zinc and sodium cyanides)
- 3,900 gallons of waste flammable liquids
- 35 pounds of waste flammable aerosols
- 275 gallons of waste multiphase liquid
- 30 gallons of waste motor oil

- 250 gallons of waste sulfuric acid
- 250 gallons of waste nitric acid
- 14,700 gallons of waste corrosive liquids (including acidic, basic, toxic, and flammable liquids)
- 17,000 pounds of waste corrosive solid
- 75,000 pounds of hazardous waste solids
- 6,700 gallons of hazardous waste liquids
- 70,000 pounds of waste alkaline solids
- 60 pounds of waste toxic solids
- 300 gallons of waste hypochlorite solutions
- 70 gallons of waste hydrogen peroxide
- 1,200 pounds of waste carbon black
- 100 pounds of waste sodium dithionite
- 11.64 tons of nonhazardous neutral solids
- 140 cubic yards of empty drums and debris
- 13,300 gallons of waste pit water
- 6,400 gallons of waste tank water.

REFERENCES

Lata-Kemron. 2015. "Health and Safety Plan for the Michner Plating Mechanic Street Site." August.

Tetra Tech, Inc. 2014. "Recording Notes in Field Logbooks." Standard Operating Procedure (SOP) No. 024. Revision No. 2. November.

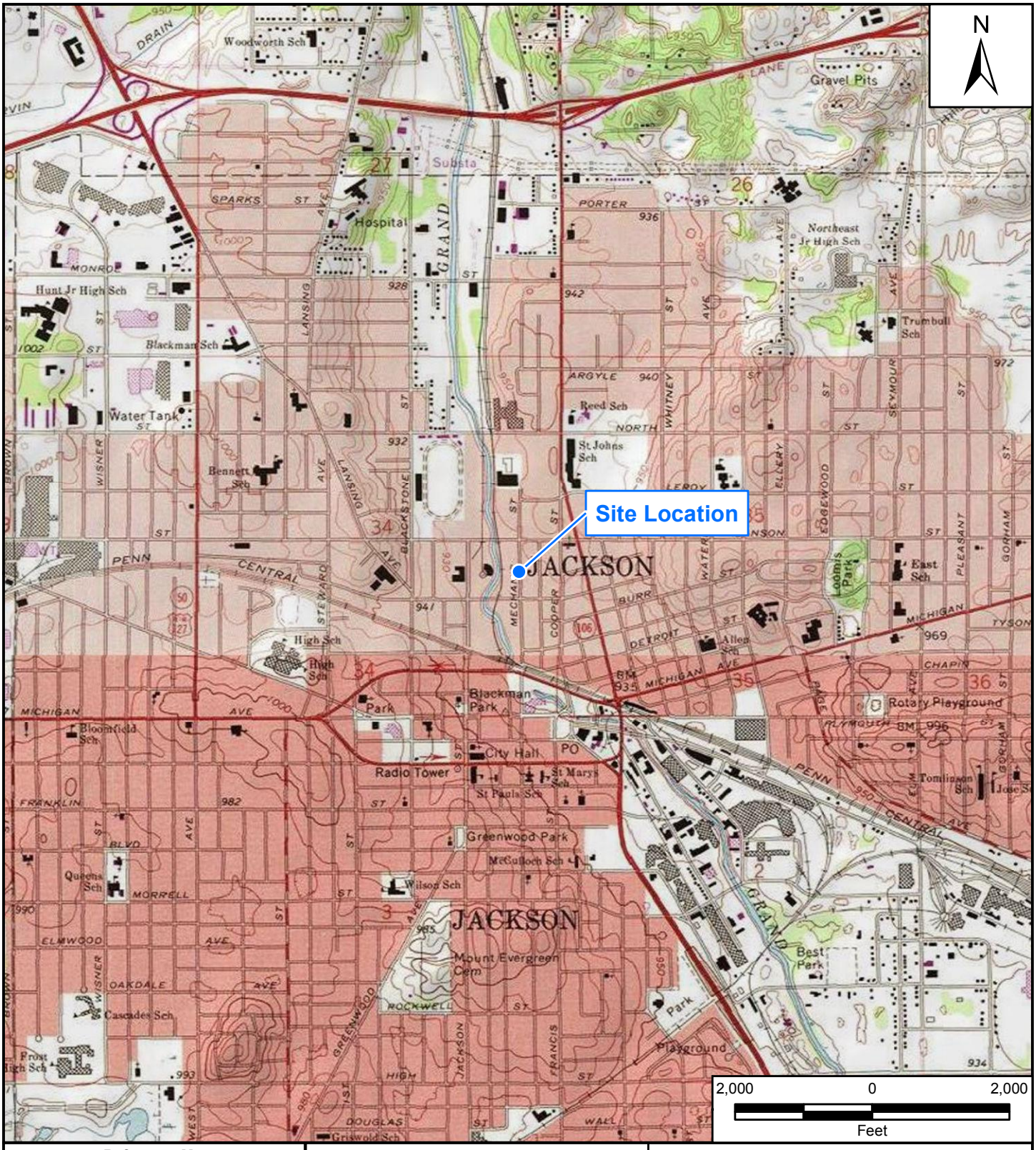
Tetra Tech, Inc. 2015a. "Site Assessment Report for Michner Plating Mechanic Street Site." August

Tetra Tech, Inc. 2015b. "Emergency Contingency Plan for Michner Plating Mechanic Street Site." September.

Tetra Tech, Inc. 2015c. "Air Monitoring Plan for Michner Plating Mechanic Street Site." September.

Tetra Tech, Inc. 2015d. "Quality Assurance Project Plan (QAPP) for Superfund Technical Assessment and Response Team (START)." December.

APPENDIX A
SITE FIGURES



Reference Map

Source: USGS 7.5-Minute Topographic Quadrangle Map: Jackson North, MI 1976

Michner Plating Mechanic Street Site
506-520 Mechanic Street
Jackson, Jackson County, Michigan

Figure 1
Site Location Map

TETRA TECH

Prepared For: EPA	Prepared By: Tetra Tech, Inc.

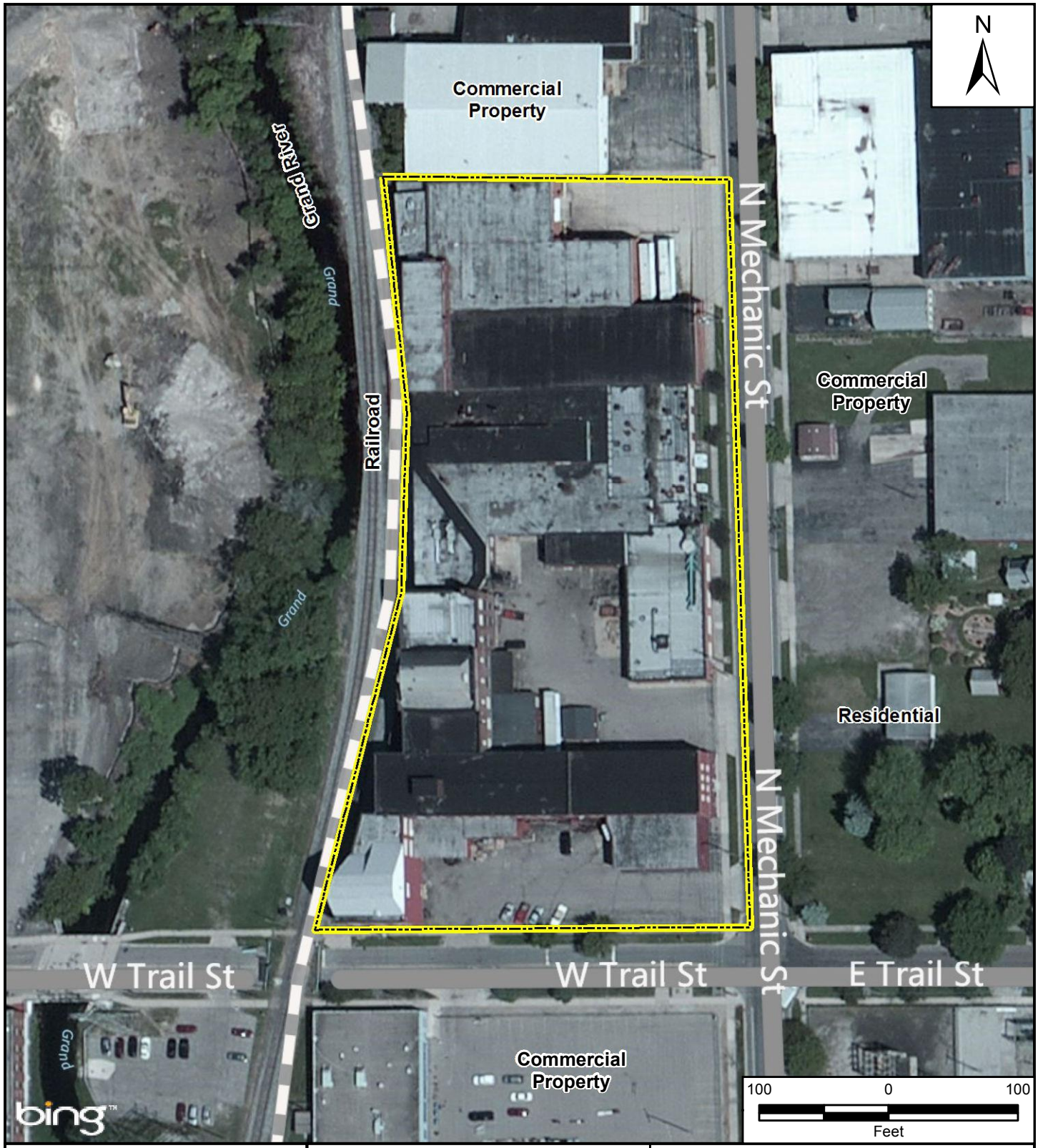
File Path: G:\G\G9026-START IV\Michigan\Michner Plating Mechanics\mxd\Fig1-506MechanicSiteLoc.mxd

Date Saved: 9/8/2015

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1505-205

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree



Reference Map

Legend

Approximate Site Boundary

Source: Bing Maps Hybrid 2013

Michner Plating Mechanic Street Site
506-520 Mechanic Street
Jackson, Jackson County, Michigan

Figure 2
Site Layout Map

TETRA TECH

Prepared For: EPA	Prepared By: Tetra Tech, Inc.

File Path: G:\IG\G9026-START IV\Michigan\Michner Plating Mechanics\mxd\Fig2-506MechanicSiteLayout.mxd

Date Saved: 9/8/2015

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1508-202

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

APPENDIX B

WASTE MANIFEST TABLE

Waste Manifest Table

Michner Plating Mechanic Street Removal

Date	Waste stream	Medium	Quantity	Units	Manifest #	Disposal
11/18/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015269770	Michigan Disposal Waste Treatment
11/18/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015269771	Michigan Disposal Waste Treatment
12/04/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015269767	Michigan Disposal Waste Treatment
12/08/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015269769	Michigan Disposal Waste Treatment
12/09/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015269768	Michigan Disposal Waste Treatment
12/10/15	Waste Corrosive Liquid, Basic	Liquid	1,045	Gallons	014463806	Michigan Disposal Waste Treatment
12/10/15	Waste Corrosive Liquid, Basic	Liquid	555	Gallons	014463807	EQ Detroit
12/10/15	Waste Corrosive Solid, Basic	Solid	16,500	Pounds	014463808	Michigan Disposal Waste Treatment
12/10/15	Waste Corrosive Liquid, Basic	Liquid	1,605	Gallons	014463808	Michigan Disposal Waste Treatment
12/10/15	Waste Flammable Liquid	Liquid	2,340	Gallons	014463810	Petro-Chem Processing Group
12/10/15	Waste Flammable Liquid	Liquid	500	Gallons	014463811	Petro-Chem Processing Group
12/14/15	Waste Alkaline Solids	Solid	33,000	Gallons	014463819	EQ Detroit
12/17/15	Hazardous Waste Solid (Empty containers & debris)	Solid	20	cubic yards	015516432	Michigan Disposal Waste Treatment
12/17/15	Waste Corrosive Liquid, Basic	Liquid	330	Gallons	014463864	EQ Detroit
12/17/15	Waste Alkaline Solids	Solid	30,100	Pounds	014463864	EQ Detroit
02/26/16	Non-Hazardous Neutral Solids	solid	12	Tons	022360	C&C landfill
03/09/16	Waste Pit Water	Liquid	5,000	Gallons	39161	Disposal and Recycling Technologies, Inc.
03/09/16	Waste Pit Water	Liquid	5,000	Gallons	39162	Disposal and Recycling Technologies, Inc.
03/10/16	Waste Tank Water	Liquid	4,652	Gallons	014994712	EQ Detroit
03/10/16	Waste Pit Water	Liquid	3,300	Gallons	31016	Disposal and Recycling Technologies, Inc.
03/10/16	Waste Tank Water	Liquid	1,800	Gallons	014994732	EQ Detroit
03/10/16	Hazardous Waste Liquid	Liquid	4,236	Gallons	014994713	Michigan Disposal Waste Treatment
03/17/16	Hazardous Waste Solid	Solid	10	Tons	014994709	EQ Detroit
03/17/16	Hazardous Waste Solid	Solid	20	Tons	014994771	EQ Detroit
04/11/16	Hazardous Waste Liquid	Liquid	580	Gallons	014994812	EQ Detroit
04/11/16	Hazardous Waste Solid	Solid	7,200	Pounds	014994812	EQ Detroit
04/11/16	Hazardous Waste Liquid	Liquid	495	Gallons	014994811	EQ Detroit

Waste Manifest Table

Michner Plating Mechanic Street Removal

Date	Waste stream	Medium	Quantity	Units	Manifest #	Disposal
04/11/16	Hazardous Waste Solid	Solid	14,400	Pounds	014994811	EQ Detroit
04/11/16	Hazardous Waste Liquid	Liquid	55	Gallons	014994813	EQ Detroit
04/11/16	Hazardous Waste Solid	Solid	19,200	Pounds	014994813	EQ Detroit
04/11/16	Waste Corrosive Liquid, Basic	Liquid	990	Gallons	014994815	EQ Detroit
04/11/16	Waste Corrosive Solid, Basic	Solid	500	Pounds	014994815	EQ Detroit
04/12/16	Waste Carbon Black	Solid	1,200	Pounds	014994832	EQ Detroit
04/12/16	Waste Hydrogen Peroxide	Liquid	70	Gallons	014994831	EQ Detroit
04/12/16	Hazardous Waste Liquid	Liquid	700	Gallons	014994828	EQ Detroit
04/12/16	Hazardous Waste Solid	Solid	6,000	Pounds	014994828	EQ Detroit
04/12/16	Hazardous Waste Solid	Solid	1,600	Pounds	014994829	EQ Detroit
04/12/16	Waste Alkaline Solids	Solid	6,400	Pounds	014994829	EQ Detroit
04/12/16	Waste Toxic Solids, Oxidizing	Solid	60	Pounds	014994830	EQ Detroit
04/12/16	Waste Hypochlorite Solutions	Liquid	300	Gallons	014994830	EQ Detroit
04/12/16	Waste Alkaline Solids	Solid	800	Pounds	014994830	EQ Detroit
04/13/16	Hazardous Waste Solids	Solid	1,200	Pounds	014994836	EQ Detroit
04/13/16	Waste Corrosive Liquid, Acidic	Liquid	605	Gallons	014994833	EQ Detroit
04/13/16	Hazardous Waste Solid	Solid	2,500	Pounds	014994837	EQ Detroit
04/13/16	Waste Sodium Dithionite	Solid	100	Pounds	014994866	Heritage Environmental Services
04/13/16	Waste Corrosive Liquid, Basic	Liquid	2,200	Gallons	014994843	Waste Management - Vickery Environmental
04/13/16	Waste Corrosive Liquid, Acidic	Liquid	970	Gallons	014994835	Petro-Chem Processing Group
04/13/16	Waste Corrosive Liquid, Acidic	Liquid	645	Gallons	014994846	Petro-Chem Processing Group
04/13/16	Waste Corrosive Liquid, Flammable	Liquid	115	Gallons	014994845	Petro-Chem Processing Group
04/13/16	Waste Corrosive Liquid, Acidic	Liquid	185	Gallons	014994845	Petro-Chem Processing Group
04/13/16	Waste Sulfuric Acid	Liquid	250	Gallons	014994844	Petro-Chem Processing Group
04/13/16	Waste Corrosive Liquid, Acidic	Liquid	2,385	Gallons	014994844	Petro-Chem Processing Group
04/13/16	Waste Nitric Acid	Liquid	250	Gallons	014994844	Petro-Chem Processing Group
04/13/16	Hazardous Waste Solid	Solid	1,200	Pounds	014994836	EQ Detroit
04/13/16	Hazardous Waste Solid	Solid	13,400	Pounds	014994834	EQ Detroit
04/14/16	Waste Corrosive Liquid, Toxic	Liquid	4,250	Gallons	014994844	Petro-Chem Processing Group
04/14/16	Waste Sodium Cyanide	Solid	2,370	Pounds	014994863	Ross Incineration Services
04/14/16	Waste Zinc Cyanide	Solid	220	Pounds	014994863	Ross Incineration Services
04/14/16	Waste Flammable Liquid	Liquid	90	Gallons	014994861	Ross Incineration Services
04/14/16	Waste Flammable Aerosols	Aerosols	35	Pounds	014994861	Ross Incineration Services

Waste Manifest Table

Michner Plating Mechanic Street Removal

Date	Waste stream	Medium	Quantity	Units	Manifest #	Disposal
04/14/16	Waste Cyanides	Solid	9,000	Pounds	014994861	Ross Incineration Services
04/14/16	Hazardous Waste Liquid	Liquid	1,600	Gallons	014994858	Petro-Chem Processing Group
04/14/16	Waste Multiphase Liquid	Liquid	275	Gallons	014994857	Petro-Chem Processing Group
04/14/16	Waste Motor Oil	Liquid	30	Gallons	014994857	Petro-Chem Processing Group
04/14/16	Waste Flammable Liquid	Liquid	495	Gallons	014994856	Petro-Chem Processing Group
04/14/16	Hazardous Waste Solid	Solid	8,600	Pounds	014994856	Petro-Chem Processing Group
04/14/16	Waste Flammable Liquid	Liquid	550	Gallons	014994855	Petro-Chem Processing Group
04/14/16	Hazardous Waste Solid	Solid	460	Pounds	014994855	Petro-Chem Processing Group

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION LOG

PHOTOGRAPHIC DOCUMENTATION LOG
MICHNER PLATING - MECHANIC STREET SITE
Jackson, Michigan

Photograph: 1 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Michner Plating Mechanic Street Site from across Mechanic Street.	

Photograph: 2 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Central parking area before office trailers were set up.	

Photograph: 3 **Sample Date:** 08/27/2015 **Photographer:** Kelly Thomas **Description:** Central portion of the northern building.	

Photograph: 4 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Drums located in the central portion of the northern building.	

Photograph: 5 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Cyanide drums located in the eastern portion of the northern building.	

Photograph: 6 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Waste material on the floor in the northern building.	

Photograph: 7 **Sample Date:** 09/01/2015 **Photographer:** Kelly Thomas **Description:** Floor sludge in the central portion of the northern building.	

Photograph: 8 **Sample Date:** 08/28/2015 **Photographer:** Kelly Thomas **Description:** Setting up the decontamination area in the southern portion of the northern building.	

Photograph: 9 **Sample Date:** 08/29/2015 **Photographer:** Kelly Thomas **Description:** Completed decontamination area.	

Photograph: 10 **Sample Date:** 09/04/2015 **Photographer:** Kelly Thomas **Description:** Staged containers in the northern building prior to sampling.	

Photograph: 11 **Sample Date:** 09/30/2015 **Photographer:** Kelly Thomas **Description:** Labeled pit in the northern building.	

Photograph: 12 **Sample Date:** 09/20/2015 **Photographer:** Kelly Thomas **Description:** Crew sampling drums in the northern building in Level B personal protective equipment (PPE).	

Photograph: 13 **Sample Date:** 09/20/2015 **Photographer:** Kelly Thomas **Description:** Crew collecting samples from staged drums in the northern building in Level B PPE.	

Photograph: 14 **Sample Date:** 09/15/2016 **Photographer:** Sean Kane **Description:** Emergency and Rapid Response Services (ERRS) chemist conducting hazard categorization on samples collected.	

Photograph: 15 **Sample Date:** 10/15/2016 **Photographer:** Kelly Thomas **Description:** ERRS chemist conducting hazard categorization on samples collected.	

Photograph: 16 **Sample Date:** 10/15/2016 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring drum contents to a cubic yard box.	

Photograph: 17 **Sample Date:** 10/15/2016 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring drum contents to a cubic yard box.	

Photograph: 18 **Sample Date:** 11/04/2015 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring drum contents to a cubic yard box.	

Photograph: 19 **Sample Date:** 10/15/2016 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring vat contents to a cubic yard box.	

Photograph: 20 **Sample Date:** 11/04/2015 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring liquid drum contents to a poly tote.	

Photograph: 21 **Sample Date:** 11/20/2015 **Photographer:** Kelly Thomas **Description:** Crew members in Level B PPE transferring acidic liquids from drums to poly totes.	

Photograph: 22 **Sample Date:** 11/04/2015 **Photographer:** Kelly Thomas **Description:** Crew members in Level C PPE transferring liquid drum contents to a poly tote.	

Photograph: 23 **Sample Date:** 03/10/2016 **Photographer:** Kelly Thomas **Description:** Repackaged waste materials staged in the northern building for transport and disposal.	

Photograph: 24 **Sample Date:** 03/17/2016 **Photographer:** Kelly Thomas **Description:** Transport of roll-off dumpster.	

Photograph: 25 **Sample Date:** 04/14/2016 **Photographer:** Kelly Thomas **Description:** Central room of the northern building after removal activities.	

Photograph: 26 **Sample Date:** 04/14/2016 **Photographer:** Kelly Thomas **Description:** Northern room of the northern building after removal activities.	

Photograph: 27 **Sample Date:** 04/14/2016 **Photographer:** Kelly Thomas **Description:** Southern room of the northern building after removal activities.	

Photograph: 28 **Sample Date:** 03/17/2016 **Photographer:** Kelly Thomas **Description:** Pole-mounted transformers remaining at the site after removal activities.	

Photograph: 29 **Sample Date:** 03/17/2016 **Photographer:** Kelly Thomas **Description:** Floor sludge located in the western room of the northern building remaining after removal activities.	

Photograph: 30 **Sample Date:** 03/17/2016 **Photographer:** Kelly Thomas **Description:** Damaged floors in the central room of the northern building	

Photograph: 31 **Sample Date:** 04/14/2016 **Photographer:** Kelly Thomas **Description:** Residual liquid and sludge remaining in the bottom of the pits after removal activities.	

Photograph: 32 **Sample Date:** 03/17/2016 **Photographer:** Kelly Thomas **Description:** Approximately 2,000-gallon tank containing nonhazardous sand remaining at the site after removal activities.	

APPENDIX D
START FIELD LOGBOOK PAGES

CONTENTS

PAGE	REFERENCE	DATE

Location Jackson, MI Date 8/25/15

Project / Client Michner Plating Mechanic Street/ USEPA

0730: START Thomas onsite. ERRS crew onsite w/ EPA OSC Hughes. Attended site safety meeting. Today's activities will include: Initial site clearance, trailer set up.

0915: START conducted site walk through w/ EPA & ERRS contractor through the main warehouse area. Observed waste materials, drums, totes, vats in the building.

0945: ERRS crews are cleaning out the small garage for use as storage and dress out area.

1100: ERRS crews are removing non-hazardous materials from the small garage (tires, furniture) to loading equipment type.

1200: crew breaks for lunch.

1300: One generator type skidsteer delivered.

1330: Crews enter warehouse building to begin clearing non-haz debris (pallets, tires, scrap metal) out of the warehouse.

1500: Crews are clearing debris, sweeping inside the warehouse area.

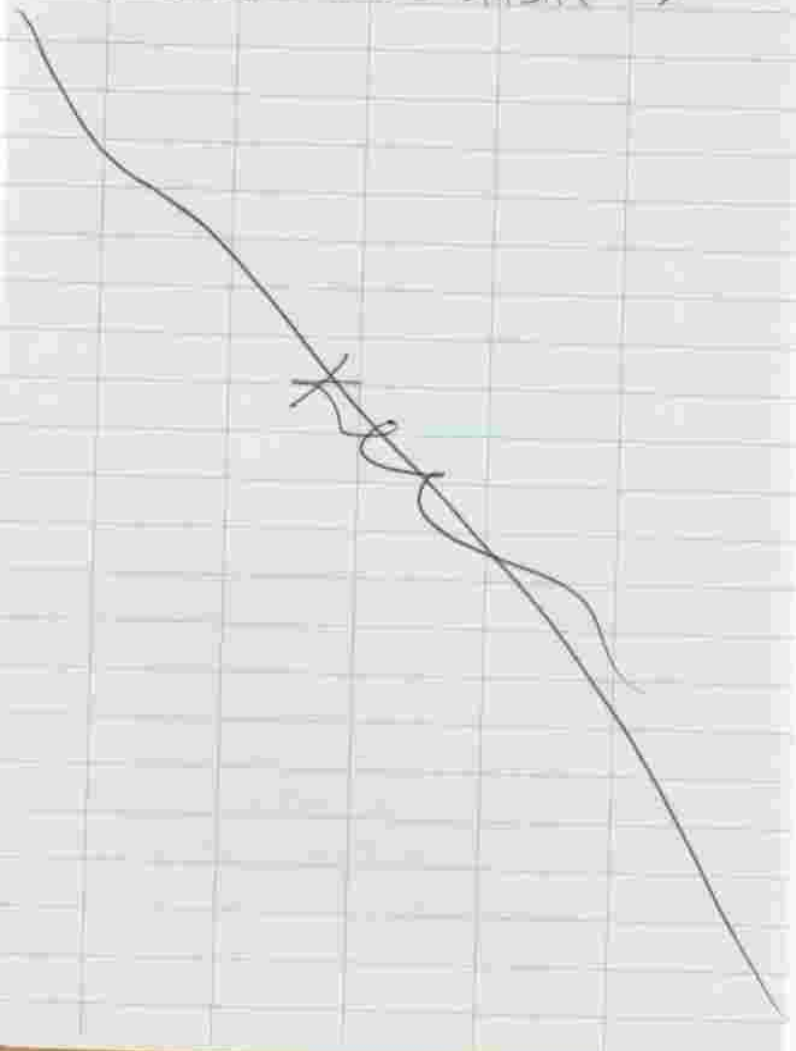
Location Jackson, MI Date 8/25/15

Project / Client Michael Plating Mechanic Street / USEPA

1600: USEPA Air Trailer onsite. (3)

1645: Crews cleaning up for the day.

1700: START Thomas offsite



Location Jackson, MI Date 8/26/15 5

Project / Client Michael Plating Mechanic street / USEPA

0730: START Thomas onsite. Attended site safety meeting. Today's tasks include: Continue w/ site set up operations. (4)

0745: Talked to OSC & ERRS RM. ERRS will procure personal HCN monitors for personnel. (4)

0830: ERRS crew is setting up generator in the warehouse to set lightstands set up. (4)

0845: ERRS setting up decon area in the warehouse area. ERRS laid poly-sheeting in decon area.

1000: ERRS purchased plywood to construct decon area

1010: Calibrated MultiRAE:
H_2S = 9.9, CO = 49, CEL = 50, O_2 = 18.1, HCN = 10.0 VOCs = 100.4

1025: Completed walk through of proposed decon area. MultiRAE not picking anything up in the decon area.

1130: Crews continue building decon area

1210: One office trailer delivered

1230: Crew breaks for lunch

1300: Crew continues building decon area.

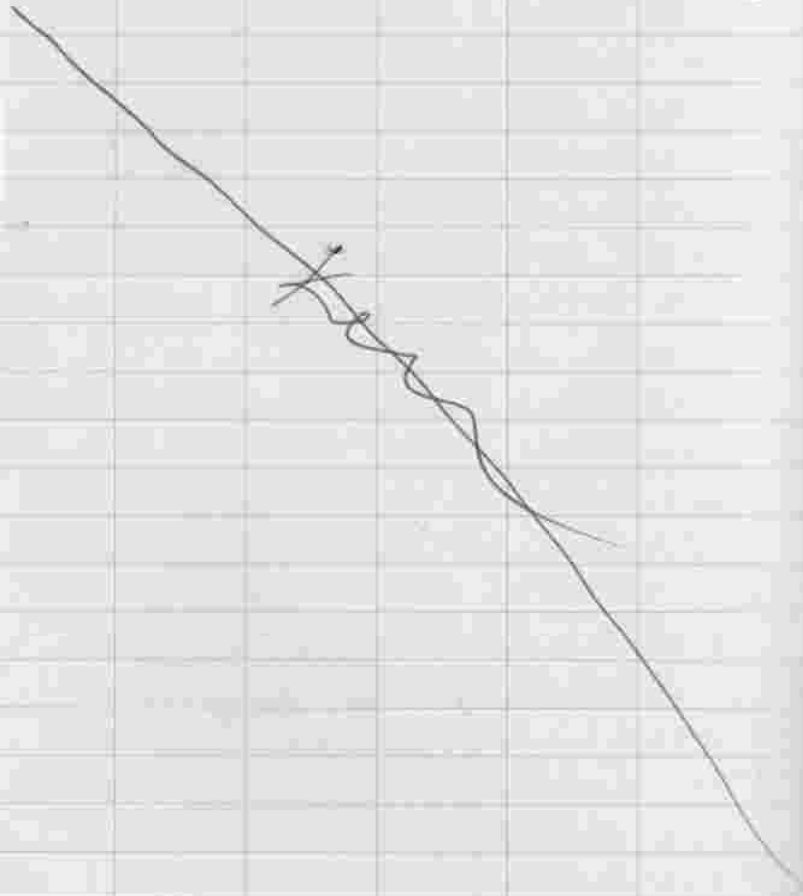
Location Jackson, MI Date 8/26/15

Project / Client Michner Plating Mechanic Street / USEPA

1400: Represent (A) Former owner (Michner) Onsite to meet w/ OSC Kemble. (B)

1430: Crews continue building decon area.

1500: START Thomas offsite. (C)



Location Jackson, MI Date 8/27/15

Project / Client Michner Plating mechanic Street / USEPA

0730: START Thomas onsite. Attended Site Safety meeting. Today's activities include: Finish building decon area; begin moving drums from staging/loading area. (D)

0900: Crews are still working on the decon area. OSC instructed START to research the cost of 4 HCN sensors for USCG equipment. (E)

1200: Crew breaks for lunch. (F)

1245: One roll-off dumpster delivered. (G)

1300: Crew continues working on decon area. (H)

1400: START entered the warehouse and smelled a strong odor. Crew is using spray adhesive in decon area (I)

1410: Calibrated MultiRAE: H2S = 10.1 CO = 50 LEL = 99 O2 = 18.2 HCN = 10.0 VOCs = 100.8 (J)

Completed walk through of warehouse area near work area. (K)

H2S, HCN, (L) LEL, CO = 0 VOCs, maximum x 1000 ppb. This is due to spray adhesive. (M)

1600: Crews complete Decon area. Staging

Location Jackson MI Date 8/27/15

Project / Client Michner Plating Mechanic Street/ USEPA

tables, chairs, buckets in decon area.
30: Crews cleaning up for the day.
700: START Thomas offsite.

Location Jackson, MI Date 8/27/15

Project / Client Michner Plating Mechanic Street/ USEPA

0730 START Thomas onsite. Attended site safety meeting. Today's activities include: Complete work on decon area, begin clearing debris from staging areas.
0815: Office trailer delivered onsite.
0830. Representative from County of Jackson Treasury Department onsite. Crews continue working on decon area.
1015: Calibrate MultiRAE:
H_2S = 9.6, CO = 49, LEL = 48, O_2 = 18.0
PEN = 10.0 VOCs = 1048
1030: Crews enter warehouse building in Level B PPE to begin sweeping areas to be used as drum staging areas.
1045: START completed walkthrough of entire building. Background levels on MultiRAE.
1130 Crews continue sweeping activities.
1200: Crew breaks for lunch
1245: Crew sweeping in staging areas.
1400: Crews continue sweeping staging areas. Conducted walkaround w/ multiRAE.
1500 Background levels w/ multiRAE.
1530: Crews still sweeping in warehouse. Most crews are in central area of the warehouse.

Location Jackson MI Date 8/28/15

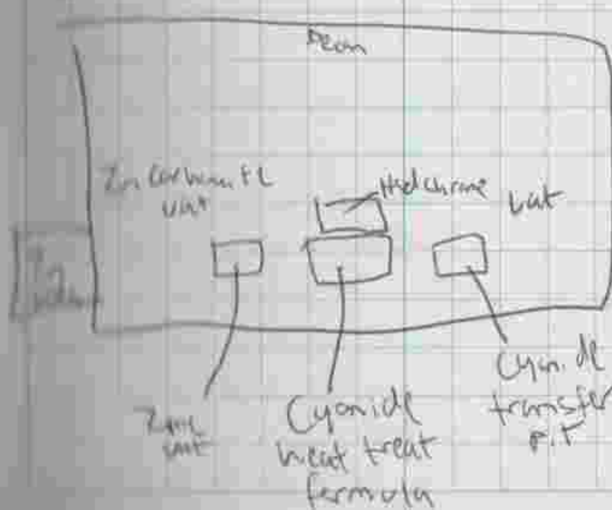
Project / Client Michner Plating Mechanic Street / US EPA

MultiRAE readings are background. — ET
1505: Office trailer onsite. — ET
Backnote: 3 office trailers onsite today.
Electricians onsite connecting power to ~~to~~ ET the trailers. — ET
1600: Crew ~~moving~~ ET moving totes to drums on pallets along the wall in the staging area to the middle of area to prepare for sampling. Crew moved 5 pallets containing 16 drums, to 4 totes ET and 4 5-gallon buckets. All containers appear to have some material inside. — ET
Crew continues sweeping in the warehouse area. Background levels on multiRAE throughout activities. — ET
1635: Crews continue moving some containers, drum pallets around the staging area. — ET
1640: 2 motors delivered onsite.
~~1645~~ ET 1650: Crew cleaning up for the day.
1700 START Thomas off site. — ET

Jackson, MI Date 8/31/15 11

Michner Plating Mechanic Street / US EPA

0700: START Thomas onsite. Attended site safety meeting. Today's tasks include: continue moving drums / pallets / totes to the staging area. — ET
0750: Calibrated MultiRAE Pro.
0800: Site walkthrough with former owner. — ET
- Zn carbonate byproduct in vat near decon area. — ET
- Previously 2 plating lines in the area of the offices. Both were zinc lines, the waste water lines. — ET
- Vats on Zinc plating line. — ET



Location Jackson, MI Date 8/31/15
Project / Client Michner Plating Mechanic Street/ USEPA

Oven w/ asbestos.
Chrome mister
Drum area:
Green solids are nickel residues
White solids are caustic residues.
Some drums are paint residues.
White powders are cleaners
Caustics, cyanides.
Some drums are hex chrome.
→ Zinc, cyanide residues.
Smaller containers associated w/ waste ~~treat~~ treatment, nickle chromate, heavy chrome
Vats ~~are~~ white powders are zinc cyanide/baths
One tank is hex chrome
ASTs are for waste water. Green solids and tank are caustic base ASTs.
Large white AST was
Oven system is ~~above~~ on second floor.
Blue tank is old sand filter, likely has residues.
Waste water lines go chrome → cyanide
Room of nickle drums. Floors covered in hex chrome paint
Powder coater residue

Location Jackson, MI Date 8/31/15
Project / Client Michner Plating Mechanic Street/ USEPA

3 drums w/ old sludge from a furnace. (ES)
Powder maybe cleaner residue. (ES)
Dacromet paint (hex chrome based paint). (ES)
Back through the middle of building:
Fire Zinc baths. (ES)
Additional drums (ES)
Blue drum is hex chrome (heavy chrome). (ES)
Drums are cleaned up material from floors.
~~Cyanide~~ (ES) Pure cyanide drums in the gated area. (ES)
Vats are zinc cyanides.
Vats are acid zinc baths in open area.
Blue drum was cadmium based cyanide bath. (ES)
Hard chrome area is (ES). (ES)
0910 Calibrated MultiRAE Pro
H_2S = 10.0, LEL = 50 O_2 = 18.1, CO = 50
HCN = 10.0 (ES)
1000 4 representatives from MDEQ onsite.
Complete walkthrough w/ OSC Kimble.
1050 Crews are scraping the floors

14 Location Jackson, MI Date 8/31/15

Project / Client Michner Plating Mechanic Street / USEPA

to clear container staging area.

1200 Crews breaks for lunch.

1300: Crews continue morning's activity scraping sludge/solid material off the floor in staging area.

1345: Completed walkthrough w/ MultiRAE all air monitoring results were background during walk through.

1630: Entered warehouse hot zone, Crews were moving containers into the staging area onto pallets.

- One container (5 gallon) was knocked over and spilled onto the concrete floor. The container was labeled as black chromate. No reading on the MultiRAE in the area of the spill.

- Crews are moving 5 gallon containers from other areas into the ~~[illegible]~~ staging area.

1715: Crews cleaning up for the day.

1730 START thomas offsite.

Ken

Location Jackson, MI Date ~~8~~ 9/1/15 15

Project / Client Michner Plating Mechanic Street / USEPA

0700: START thomas on site. Attended site safety meeting. Today's tasks include continue staging drums to containers in the staging area; begin collecting samples from drums & containers that have been staged.

0715: START Kane conducted a walk through w/ the MultiRAE. All readings were zero throughout the building.

0845: 2 Coast Guard members onsite meeting with OSC Kimble.

0900: Conducted site walkthrough w/ Coast Guard members. Discussed air monitoring parameters.

1000: Attended site sampling meeting w/ ERRS sampling ~~team~~. Team will enter warehouse in teams of 3 for sampling.

(1) person will collect samples

(2) person will handle samples

(3) person will log and document samples.

1100 ERRS is labeling sample jars, and laying out equipment (drum thieves, scoops) for sampling.

1200 Entered warehouse in Level C w/

Location: Jackson, MT Date: 9/1/15

Project / Client: Michaud Plating Mechanic Street/ USEPA

EERS in Level B ppe. Observed sampling activities. EERS collected samples from containers 001 - 014 except 004 to 005 bc the containers couldn't be opened

1240: EERS out of hotzone to break for lunch

1340: EERS enters hotzone to begin sampling w/ START lone.

START lone reported VOCs ≈ 1 ppm and HCN ≈ 0.5 ppm during sampling

1500: EERS on break.

1530: START Thomas enters Warehouse w/ crew to observe sample collection. Observed EERS crew collect samples ~~001~~ 034 - 035. EERS also went back and collected samples 004 to 005 after using a saw to open the drums.

1630: EERS completed sampling. Crew is also loading non-hazardous debris materials (wood) from outside the building into roll-away dumpster.

1715: Crews cleaning up for the day.

1730: START Thomas off site.

Location: Jackson, MT Date: 9/2/15

Project / Client: Michaud Plating Mechanic Street/ USEPA

0700: START Thomas on site. Attended tailgate safety meeting. Today's activities include continue collecting samples from staged containers. Continue staging containers from drum area.

0730: Conducted walkthrough of the building prior to crews' entry. VOCs at 0.4 - 0.5 ppm w/ MultiRae Plus. All other monitoring levels = 0.0.

0745: Calibrated MultiRAE Pro:

O_2 = 18.0 LEL = 49 CO = 50

H_2S = 10.1 HCN = 10.0 VOCs = 100.3

0800: EERS crew entered the warehouse. START observed EER ~~sampler~~ collect samples from containers 034 - 043. MultiRAE readings were background throughout the sampling event.

1100: Crews break after sampling. Reenter the warehouse to complete additional sampling. One set of crews cleaning non-haz debris materials around the site, inside trailer area, and disposing items in the roll-away dumpster.

1220: Crew breaks for lunch.

Location Jackson, MI Date 9/2/15

Project / Client Michner Plating Mechanic Street USEPA

1330: Crews back to clearing debris out of the parking areas.
1400: Crew enters building in Level B ppe to collect samples. START leaves accompanied Crew. Reported all backgrounds levels w/ Mult. RAE.
1530: Crew continues collecting non-hazard debris materials around the trailers to placing into roll-away dumpster.
1630: Crew enters warehouse in Level B ppe for final sampling activities. All values on multiRAE are background levels.
1715: Crew exits warehouse.
1730: START thomas off site.

Location Jackson, MI Date 9/3/15

Project / Client Michner Plating Mechanic Street USEPA

19

0700: START Thomas onsite. Attended site safety meeting. Today's tasks include: staging drums from drum area in staging area; continue collecting samples and recording sample info on container inventory logs:
0745: Crew enters warehouse. One team is collecting samples from containers, one team is staging containers. Crew completes sampling up to container 088.
START recorded information on same container labels:
032-035: Label was not readable.
DOT Hazard label: Corrosive.
036-038: Hava Black Catalyst from Haviland Company.
039: Haviland Company: HP Descaler Fex Plus
045: Permatreat 650
046: Rinse Aid #4; ID'd as flammable.
060-061: Utra Black Part B Oxidizer.

Location Jackson, MI Date 9/3/15

Project / Client Michner Plating Mechanic Street/ USEPA

052-053: HavaBlack 50 Labeled as corrosive.

0915: Crew continues collecting samples from containers. Crew also staging drums in staging area.

1000: Crews stop for break.

1100: Crews reenter work zone for sampling. Second crew continues staging containers in the staging area.

All monitoring levels are background on MultiRAE.

1200: Crew breaks for lunch.

1330: Crew 1 reenters work zone for additional sampling. Crew #2 is setting out sample materials & containers for sampling.

430 Sample crew 1 exits work zone. Air monitoring levels were background throughout sampling event.

1745: Sample crew # 2 enters work zone.

1500: Sample crew # 1 enters work zone. Both crews are sampling in the staging areas.

530: Both crews exit work zone for break.

Sample crew 1 completed sampling containers thru 30. Sample crew 2 completed containers

Location Jackson, MI Date 9/3/15

Project / Client Michner Plating Mechanic Street/ USEPA.

128 - 133.

All air monitoring results were background throughout sampling events.

1630: Both crews reenter work zone w/ Level B ppe to begin sampling. START lone accompanied crew. Reported air monitoring levels at background throughout sampling. Observed one drum that was under pressure which released gas during opening the bunghole.

1715: Crew exits the building and begins cleaning up for the day. ERLS chemist reports that hazcat-ing has begun on samples 001 - 010. Chemists recording results on container inventory loss.

1730 START Thomas offsite.

Location: Jackson MI Date: 9/4/15

Project / Client: Michner Plating – Mechanic Street Site USEPA

0700 START Thomas on site. Attended site safety meeting. Today's activities include: continue sampling containers in the staging area; continue haz-cats.
0715: Calibrated MultiRAE Pro except HCN (waiting for HCN calibration gas).
O_2 = 18.0 CO = 50 LEL = 50 : H_2S = 24.9, VOCs = 108.2.
0730: START Kane conducted site walk through particularly ~~no detections~~ by crew. No detections on MultiRAE.
0800: Crew is setting up sample jars and sampling supplies in the hot zone in Level B PPE.
0920: Crew #1 & Crew #2 enter the hot zone in level B ppe to collect samples.
Crews are collecting samples in the drum storage area.
1015: Crews exit hot zone. Collected samples from containers thru 152. Air monitoring levels ~~were~~ did not exceed background levels
1030 Crew breaks.
~~1045~~ 1100 Crew dressing to enter hot zone
1130: Crew #1 & Crew #2 enter hot zone in Level B ppe to collect samples from additional drums
1215: Crew exits hot zone. ~~Air monitoring levels~~

Location: Jackson MI Date: 9/4/15

Project / Client: Michner Plating – Mechanic Street Site USEPA.

~~did not exceed background levels~~. One drum bunghole was rusted shut & crew could not open so they used a saw to open. START observed the drum & monitored w/ MultiRAE prior to opening ~900 ppb VOCs.
Air monitoring showed VOCs ~2 ppm in the hot zone.
1230: Crews break for lunch.
1315: Representative of City of Jackson onsite meeting w/ OSC Kimble. City representative is Daveda Quinn – Supervisor Industrial Pretreatment from Jackson Water Department.
1345: Crews preparing to enter hot zone in Level B ppe to complete sampling.
1400: Representatives of the City of Jackson Fire Department onsite meeting w/ OSC Kimble.
Crews enter the hot zone to collect samples. Sampled thru container 245
1600: Crews exit hot zone. Air monitoring results showed all background readings except VOCs. VOCs ~1.5–2.5 sustained in the breathing zone. VOC

Location: Jackson, MI Date: 9/4/15

Project / Client: Michner Plating – Mechanic Street Site USEPA

spiked to ≈ 10 ppm for < 1 minute several times associated w/ opening drums marked as flammable. No sustained VOC readings in the breathing zone > 5 ppm.

~~030: Crews enter work zone to gather sample jars to cleanup work zone.~~

Activities are completed in Level C ppe.

00: Crews cleaning up for the day.

30: START Thomas off site.

Location: Jackson, MI Date: 9/8/15

Project / Client: Michner Plating – Mechanic Street Site / USEPA

0700: START Thomas on site. Attended the site safety meeting. Today's activities will include: continue sampling containers, staging additional containers in the staging area, continue haz-cating samples.

0710: START conducted a walkthrough of the warehouse w/ the MultiRAE. All background readings observed during initial walkthrough. No evidence of vandalism or trespassing over the long holiday weekend.

0720: Calibrated MultiRAE Pro: H_2S = 10.0, CO = 50, LEL = 50, O_2 = 18.0, HCN = 10.1, VOCs = 10.8.

0745: Crews are marking/labeling drums in Level C ppe. START observed one container that had not been labeled. Crew numbered container and will sample today.

0900: Crew entered warehouse in Level B ppe ~~to~~ to begin sampling.

1045: Crew exited warehouse for break.

1130: Crew enters ~~Level~~ warehouse in Level B ppe to continue sampling. Crews sampling drums & containers. All levels background except VOCs. VOCs spiked to ≈ 100 ppm

...un crew opened a drum marked flammable. VOCs sustained ≈ 3ppm which is below the ~~(KL)~~ Action Level.
1215: Crew exits warehouse.
1230: Crew breaks for lunch.
1330: Crew back from lunch. Preparing to go back into warehouse to ~~s~~(KL) collect samples.
1410: Crew enters warehouse to collect samples in Level B ppe. START Kane in ~~(KL)~~ exclusion ~~Cone~~(KL) zone w/ crew. Reported only background readings w/ multiRAE.
1530: Crew comes out of warehouse – Onsite Chemist continues hazcatting samples.
1630: Crew enters exclusion zone to collect samples. Air monitoring results all background. Got a slight elevation in H_2S, CO, and VOCs in the area directly in exhaust of light pole, but no reading outside exhaust. Crew collects 2 samples, and sets up for tom[orr]ow's sampling.
1700: Crew exits warehouse. Cleaning up for the day
1730: START Thomas off site.

Kane

0700: START Thomas onsite. Attended site safety meeting. Today's tasks include: continue collecting samples from containers; continue hazcating samples.
Backnote: ERRS chemist reports he has haz-catted 72 samples through 9/8/15. (KL)
Crew collected samples through ~~286~~ 219
0710: START Kane completed walkthrough of warehouse w/ MultiRAE. Kane did not notice any elevated readings. Observed wet conditions but no pooled ~~cond~~(KL) water.
0720: Calibrated MultiRAE Pro.
H_2S = 10.0, CO = 50, LEL = 50, O_2 = 18.1
HCN = 10.0, VOCs = 10.7.
0745: Crew enters warehouse area to collect samples from containers.
Crew collected thru sample container 290.
0900: Crew exits Level B sampling.
START conducted air monitoring throughout the sampling event. No elevated readings in the breathing zone ~~the~~(KL) during sampling. Crew also staged additional containers to prepare for sampling.
Crew #2 is in the office area collecting

Location Jackson MI Date 9/9/15

Project / Client Michner Plating - Mechanic Street Site
USEPA.

Containers to bring to the staging area in the warehouse.

0700: Crew enters warehouse in Level C PPE to label containers, sweep in the staging area and move additional containers into the area. START completed walk around the site perimeter w/ MULTIRAE. No elevated readings due to site activities.

USC6 deployed 2 DataRAMs. 1) in the CRZ 2) in the parking area south of the work zone.
DataRAM 1: 79.2 to 89.3 (TWA)
DataRAM 2: 2.3 to 4.1 (TWA).

0755: Crew exits work zone.

1200: Crew breaks for lunch.

1330: Crews enter work zone in Level B PPE to continue collecting samples. START time accompanies.

1400: Conducted walk around the exterior of the site w/ MULTIRAE, no elevated reading outside the buildings.

DataRAM 1: 70.3 to 21.4 (TWA)
DataRAM 2: 6.4 to 4.3 (TWA)

1500 Crew exits work area.

1400. Crew #2 enters warehouse to begin sweeping in the large open room to staging

Location Jackson, MI Date 9/9/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

drums and containers in the room. Crew #1 enters to collect samples from containers in staging area.

Crew collected samples through entire #3360. START monitored work zone w/ MULTIRAE Pro. Observed no exceedances of readings above background during sampling except in the waste container w/ sample. Any supplies, i.e. drum thieves, rags, wipes. Observed VOCs ≈ 500 ppb. No additional exceedances.

1700: Crews exit work zone. Cleaning up for the day.

1730: START Thomas offsite.

30 Location Jackson, MI Date 9/10/15
Project / Client Michner Plating - Mechanic Street Site - USEPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities will include: continue sampling containers, staging drums, hazcatting samples.
0715: START Kane completed walkthrough of the warehouse w/ MultiRAE. Observed no evidence of trespassing, all readings on MultiRAE were background levels.
0720: START Thomas calibrated MultiRAE Pro: Gas=101, LEL=49, CO=50, O_2=18.0, HCN=10.0, VOCs=10.71 (initials)
0745: Crews enter work zone. Crew #1 completing sampling; Crew #2 sweeping/staging containers in central portion of the warehouse area. (initials)
0945: Crews exit work zone. Air monitoring levels are background throughout activities. (initials)
1015: Crews enter work zone. ~~Crew~~ (initials) to continue morning operations. START Kane accompanies crews during sampling and staging. START Thomas conducted air monitoring in the CRZ during staging & sampling. No levels above background observed. START Kane reported ~0.5ppm HCN during sampling in the work zone. (initials)
1145: DataRAM #1 70.1 to 29.3 (TWA)
DataRAM #2 2.3 to 4.8 (TWA) (initials)
1200: Crews exit work zone

31 Location Jackson, MI 9/10/15
Project / Client Michner Plating - Mechanic Street Site

1215: Crew breaks for lunch. (initials)
1300: Crew back from lunch.
1330: Crews enter work zone. Crew #1 continues sampling in the staging area; Crew #2 in Level C A/B staging containers & sweeping. (initials)
1415: Crews exit work zone for a short break. Air monitoring levels are background except for short intervals of HCN ≥ 0.5ppm. Additionally, START monitored ~~(initials) 385~~ (initials) container 385. MultiRAE recorded levels at 50 ppm HCN, 30 ppm H_2S in the headspace of the drum. No readings were recorded outside the drum. (initials)
Also monitored CRZ to decon area w/ the MultiRAE. No elevated readings observed.
1440: Crews reenter the work zone to continue earlier activities.
1530: ~~Crew~~ (initials) Crew #1 exits work zone after completing sampling. Crew sampled through container 386. Crew #2 continues staging containers. Air monitoring levels were background during work activities.
1630: Crews enter work zone to begin preparing

Location: Jackson MS — Date: 9/10/15

Project / Client: Michner Plating Mechanic Street Site/USEPA

[illegible]er tommorow's sampling in level C PPE. Crews [illegible]et out sample jars, drum thieves and other equipment. [illegible]ir monitoring around the perimeter of the site shows [illegible]o emissions are escaping the building.

[illegible]715: Crews cleaning up for the day

[illegible]30: START thomas offsite.

Location: Jackson, MS — 9/11/15

Project / Client: Michner Plating Mechanic Street Site/USEPA

0700 START Thomas onsite. Attended site safety meeting. Today's activities include: Continue collecting container samples, staging containers, haz cating.

0715: Calibrated MultiRAE Pro:

H_2S = 10.1 CO = 50 LEL = 50 O_2 = 18.2

VOCs = 10.54 HCN = 10.0

0730 START Kane conducted walkthrough of the building w/ MultiRAE. No elevated readings were observed.

0800 Crews enter work zone. Crew #1 enters in level B PPE to continue container sampling. Crew #2 enters in level C PPE to continue staging containers.

0930 Crews exit work zone. Air monitoring results in the work zone are all background levels. START also conducted perimeter air monitoring around the site. No detections above background levels.

1115 Crews enter work zone to label to prepare for afternoon sampling activities.

1200 Crews break for lunch.

1315 12 representatives of Jackson County Health Dept, City of Jackson Fire Dept,

Location: Jackson MI Date: 9/11/15

Project / Client: Michaud Plating - Mechanic Street Site
US EPA

d Summit Township Fire Dept. onsite for a walk through.

330 crews preparing to enter the work zone for sampling

430: Crew # 2 in level C PPE gathering containers from the CEZ area and staging in the staging area. One fiber drum of solid powder broke open & powder is spilled on the floor. No visible dust emissions observed.

500: Crews exit work zone.

600: Crews enter work zone. Crew # 1 in Level B PPE, Crew # 2 in Level C PPE. Crew # 1 is collecting samples in the central portion of the building. Completed through 137. Crew # 2 is moving and staging containers in the staging area.

Air monitoring results did not show any elevated readings above background levels in the sampling area or the staging area.

1630 Crew # 1 exits work zone. Crew # 2 still staging inbound containers.

1700 crews cleaning up for the day.

1730 Stacy Thomas offsite.

Location: Jackson, MI Date: 9/14/15

Project / Client: Michaud Plating - Mechanic Street Site
US EPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities include: Continue Hazcatting samples, continue staging containers, continue collecting samples from stage containers.

0720: Calibrated MultiRAE Pro.
LEL = 50 H_2S = 10.3 O_2 = 18.1 CO = 50
HCN = 10.0 VOCs = 10.23 0

0730: Crews entered warehouse area in Level C to collect samples & a separate crew entered in Level C PPE to stage additional containers.

START leave to EPA rep Keith Lesnick entered exclusion zone w/ crews to conduct air monitoring.

1000: Crews exit exclusion zone for break. Back note: Onsite chemist completed thru sample 185 for haz-catting.

1115: Crews enter exclusion zone for continue morning's activities. Crew # 1 continues collecting samples, Crew # 2 continues staging and labeling containers. START leave reported air monitoring levels are background w/ no elevated readings during work activities.

Jackson, MI Date 9/14/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

1135: Conducted a walk around of the building - all air monitoring levels were background outside the work areas

1200: Crew breaks for lunch

1235: US Coast Guard received 3 HCN sensors for AreaRAES & will deploy areaRAES during work activities tomorrow.

1335: Crew enters exclusion zone. Both crews are collecting container samples. Crew is near end preparing to open 6 drums which are labeled as 98% Sodium Cyanide which correspond to drums the former owner identified as pure Cyanide. Air monitoring did not identify any readings above background during container opening including HCN=0.0 throughout activities

1450: Crew breaks.

1550: Conducted a walkaround the exterior of the buildings. No air monitoring readings above background.

1630: Crew enters the ~~bot~~ exclusion zone to complete sampling. START Rene reports air monitor levels at background throughout sampling activities.

1715: Crew exits exclusion zone & cleaning up for the day

1730: ~~Ce~~ ~~el~~ START Thomas offsite

Jackson, MI Date 9/15/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

0700: START Thomas onsite. Attended Site Safety meeting. Today's activities include: Continue haz-cating samples and collecting samples from containers

0715: START Rene conducted pre-entry survey of the exclusion zone prior to entry by crew. START did not observe any breaks or evidence of trespassing or damage and air monitoring levels were background w/ no elevated readings

Backnote: Crew collected samples yesterday up to Container 566.

0730: Crews enter exclusion zone to begin collecting samples. EPA Keith Lesman accompanied Crews during sampling.

0900: USCG deployed 3 AreaRAES in the building

0930 ~~START Rene~~ AreaRAES are detecting CO in the CEZ at 10-15 ppm due to generator and light post. This is below the Action level of 25 ppm. However, START talked to RM Beland to move or address generator RM Beland will take actions to move or improve scrubbers on generator to light post.

Location: Jackson, MI   Date: 9/15/15
Project / Client: Mihner Plating – Mechanic Street Site
USEPA

1000: Crew exits the exclusion zone. ERRS foreman pulled crew out because they got alarms sounding on the personal HCN monitor. HCN increased to over 20 ppm in the sampling area. Crews exited. EPA Keith Lesner did not record any readings above 2.0 in his area throughout sampling.
1030: Crew moved the light post to decrease exhaust into the CRZ.
1035: START Thomas entered the exclusion zone for photos & air monitoring. Did not detect and HCN in the staging area. CO was detected in the CRZ ≈ 20-25 ppm but decreased after light post was moved. No CO detected in the exclusion zone.
1100: Crew re-enters exclusion zone to collect additional samples accompanied by START Kane.
1145: Crew exits exclusion zone. START Kane reported that HCN was detected in the northern portion of the building consistently over the level & action level of 2.0 ppm. But outside the immediate sampling area HCN was not detected above background with some short increases up to 10 ppm.

Location: Jackson, MI   Date: 9/15/15   39
Project / Client: Mihner Plating – Mechanic Street Site
US EPA.

1200: Crew breaks for lunch.
1300: Crew returns. Begins dressing for afternoon sampling.
1335: Crews enter exclusion zone. Crew #1 is in the ~~western~~ southern portion of the building, in the water treatment area. Collected 3 samples from containers on the catwalk. Crew #2 is collecting samples from the northern portion of the building where drums in poor condition are staged inside concrete berms. Crews HCN monitors are consistently reading 2.5-10 ppm. HCN is ≈ 0.5-1.0 ppm outside the immediate sampling area.
1515: Crews break for ~~lunch~~ break time.
1600: Crew enters exclusion zone to finish sampling. START Kane accompanies crew to collect samples. Reports similar conditions to earlier in the afternoon. With crews experiencing HCN ≈ 2.5-10 ppm in the sampling area, but levels below the Action Level of 2.0 ppm outside the immediate area.
Back note: talked to OSC Edwards. START will bring EPA owned AreaRAES to the

Jackson, MF 9/15/15

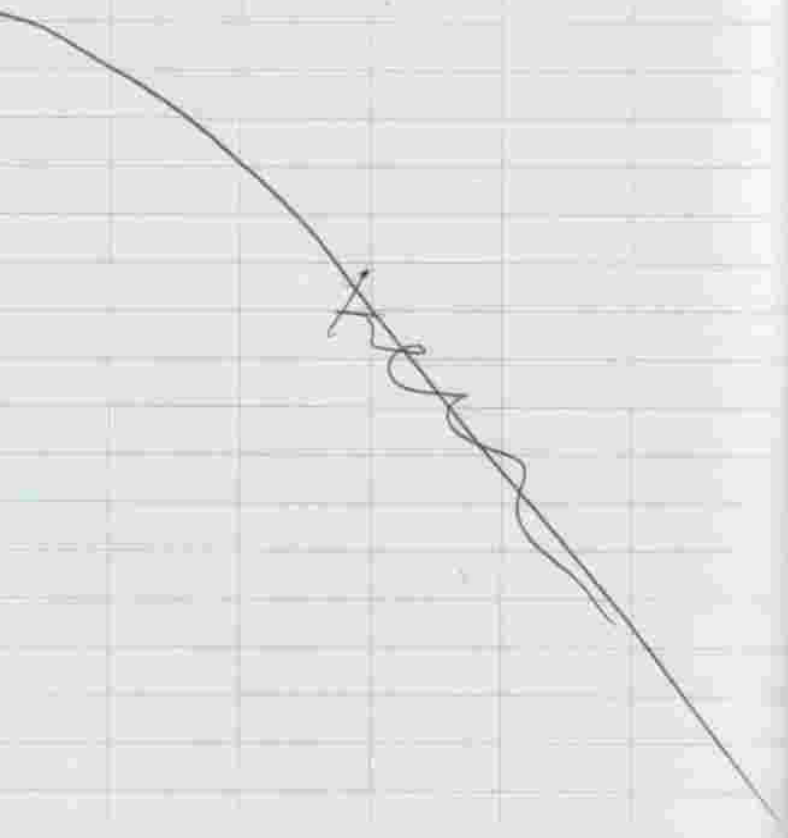
Project / Client Michael Plating Mechanic Street Site — USEPA

site next week while USCG is away and will deploy on site.

1645: Crew exits exclusion zone. Crew also moved and staged corroded drums from main drum area on poly sheeting in the staging area

1715: Crew cleaning up for the day.

730: START Thomas offsite.



Jackson, MF 9/16/15

Project / Client Michael Plating Mechanic Street Site USEPA

0700 START Thomas onsite. Attended site safety meeting. Todays activities include: continue haz-cat samples, continue collecting samples, begin moving drums to containers from the garage attached to the office building into the warehouse. Onsite chemist also reported that haz-cat results indicate the presence of some reactive sulfides, which had not been detected in the site assessment.

0730: Calibrated Multi RAE Plus:
H_2S=25, LEL=49 O_2=20.9, HCN=9
VOCs=100

0735: EPA Keith Lesnick conducted initial site walkthrough w/ Multi RAE. Did not report any changes or evidence of reactions over night. All readings were background throughout the exclusion zone. Note: EDA did not enter areas that were exhibiting HCN > 2.0 ppm

0745: Crew enter exclusion zone.

0755 Calibrated Multi RAE Pro:
H_2S=10.1, LEL=49, CO=50, O_2=18.0
HCN=10.0 VOCs=10.67.

Note: Crew #1 entered the warehouse

Jackson MI 9/16/15

Project / Client Michner Plating Mechanic Street Site USEPA

in Level B to continue collecting samples. crew # 2 is in the office building in Level D to gather containers to drums from the building to stage in the warehouse building.

0900: Observed ERLS drum skidsteer on the side walk adjacent to the site from the warehouse to the southern loading area, and driving pallets of drums to the warehouse. ERLS reportedly did dry decon of the skidsteer tires prior to driving out of the exclusion zone.

1000. ERLS breaks

1115: Crew #2 to Crew #1 return to morning activities. Crew #1 is sampling drums in the central staging area. Drums in this area are badly deteriorated due to caustic nature of contents, therefore crew is collecting samples from accessible drums, to determine if containers can be safely moved to a poly sheeted area where the containers will likely breakdown further and contents are likely to mix. Conducted air monitoring in the sampling area. No readings above background readings were detected.

Jackson MI 9/16/15 43

Project / Client Michner Plating Mechanic Street Site USEPA

1200: Crew breaks for lunch.

1300 Crew enters work zones to continue morning activities w/ START lead. Conducted a walk around the property w/ the MultiRAE to confirm no emissions are escaping the site. No elevated readings were detected.

1500 - Crew exits work zone. START lead reported no elevated readings in sample area. Crew is sampling containers brought to the warehouse from the office areas.

1600 Crews re-enter the exclusion zones to continue collecting samples to gather containers.

No elevated readings w/ MultiRAEs in the work zone

1640: Crew breaks. No additional sampling will be conducted today.

Now crews re-enter warehouse in Level C mode to label containers to set out sampling materials for tomorrow.

1735: Crews cleaning up for the day.

1730: START themas offsite.

Jackson, MI 9/17/15

Project / Client Michner Plating Mechanic Street Site
USEPA

0700. START Thomas on site. Today's activities include: continue collecting samples; continue haz cating samples; continue gathering containers from office building. ——— (initials)

Backnote: EPA Kieth Lesman calibrated MultiRAE plus at 0630 ——— (initials)

0715: calibrated 2 personal HCN monitors for ERRS personnelle. Both units: HCN=10.0

0730: Calibrated MultiRAE Pro (initials)
H_2S=9.7, O_2=17.9, CO=50, LEL=99
VOCs=10.67 HCN=10.0 ——— (initials)

0745: conducted walk around the perimeter w/ MultiRae to determine if emissions were escaping the site. No elevated readings detected.

0800: Talked to OSC Edwards regarding Coast Guard AreaRAEs. OSC Edwards indicated USCG AreaRAEs would remain in the building until next week when EPA AreaRAEs will be staged along the perimeter when USCG is offsite. ——— (initials)

0810: Crew #2 is in the garage next to the office building gathering containers to using the skidsteer to move containers into the staging area.

Backnote: Crew completed sampling through #674 on 9/15; through 711 on 9/16 ——— (initials)

Jackson, MI Date 9/17/15 45

Project / Client Michner Plating Mechanic Street Site
USEPA

0900: Observed crews collecting containers in the garage attached to the southern office building to move to the warehouse staging area. Crews have moved 4 tanks identified as a water conditioning system to a reverse osmosis system equipment out of the garage and staged outside. ——— (initials)

0930: 2 representatives of the Jackson Police Department (Both named Jason) meeting with OSC Edwards. Suggested blocking an opening in the northern bay door, and locking the third floor door on the Southern building to the exterior fire escape. ——— (initials)

1000: Crew breaks for (initials) ——— (initials)

1100: Crews enter work zone to continue morning activities. Crew #1 is collecting samples from containers in the northern staging area. One crew member enters several times driving the skidsteer w/ pallets containing additional containers from the office building. Office building crew is unable to bring some containers down from upper levels of the building b/c the elevator is broken ——— (initials)

Location Jackson, MI 9/17/15

Project / Client Michiver Plating - Mechanic Street S/P
USEPA

NO elevated readings were detected during sampling activities.

1300. Crew breaks for lunch.

1400. Crew breaks from lunch; dressing to go back into workzone.

1430: Crews reenter workzone to continue morning's activities. Crew #1 enters warehouse to collect samples accompanied by EPA Krieth Lesman

1400: observed onsite chemist conducting hazcat activities. Conducted walkaround the perimeter of the Site w/ MultiRAE. No elevated readings detected.

1430: Crew # 2 is in the garage of the office building loading to be wrapping w/ plastic containers for transport to the warehouse building.

1500: Crews break.

1545: Crews preparing to reenter workzone.

1600: Crews reenter workzone. Crew #1 continues collecting samples in the sampling area and Crew #2 is staging and transferring containers from the office building to the staging area.

1645: Crew #1 exits workzone. No elevated readings detected on MultiRAE during sampling.

Location Jackson, MI Date 9/17/15

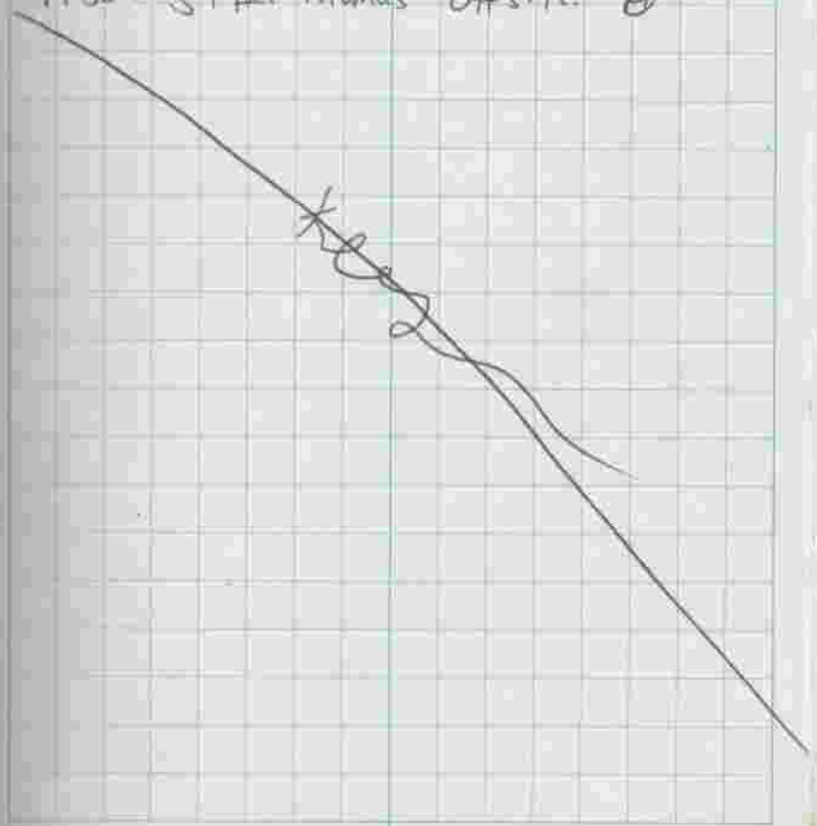
Project / Client Michiver Plating - Mechanic Street Site
USEPA

Coast Guard pulls Area RAE units.

1700: Crew #1 reenters workzone in Level C to label containers to prepare for tomorrow's sampling. Crew #1 completed sampling through container # 775

1715: Crews cleaning up for the day.

1730: START Thomas offsite.



Location: Jackson MI   9/18/15

Project / Client: Michner Plating – Mechanic Street Site
USEPA

700: START Thomas onsite. Attended site safety meeting. Today's activities include: continue collecting drum & container samples in the staging area; continue gathering containers from the office building; continue haz-cating samples. Note: Crew will not be bringing any containers from the office building into the warehouse due to heavy rains. ——— (initials)

Weather: 63°F, 92% Humidity, wind: SSW @ 12 mph, raining. ——— (initials)

0715: Crews are preparing to enter the work zones & continue yesterday's activities.

0720: Calibrated ERRS MultiRAE Lite
O = 51 H_2S = 25.1   LEL > 50   HCN = 10.0
VOCs = 100

Calibrated MultiRAE Pro:
O = 50 H_2S = 10.1   LEL = 50   HCN = 10.0
VOCs = 10.71 ——— (initials)

0730: Crews enter work zones. Crew #1 in Level B PPE to collect samples accompanied by START Kane. Crew #2 in Level C PPE in the office area collecting containers ——— (initials)

0830: Crew #2 is on the first floor gathering containers to bring to the garage. (initials)

Location: Jackson MI   Date: 9/18/15

Project / Client: Michner Plating – Mechanic Street Site
USEPA

0945: Crews coming out of work zones.
1000: Crews break. START Kane reported that Crew #1 is still sampling in the northern building. No elevated air monitoring readings were detected. ——— (initials)
1100: Crews re-enter work zones to continue early morning activities. No elevated readings detected w/ air monitoring equipment. Also, rain has stopped so crew #2 is also transporting wrapped, covered containers from the office area to the warehouse. (initials)
1200: Crews break for lunch. ——— (initials)
1330: Crews re-enter work zone. Crew #1 continues morning activities. Crew #2 in warehouse wrapping & covering sampled drums w/ poly sheeting to minimize vapors, spills, moisture in the containers. (initials)
1500: Crews break. ——— (initials)
1600: Crews are done collecting samples for the day. Crews collected through #850. Crews will clean up, decon PPE, wrap containers, and label containers for the rest of the afternoon. ——— (initials)
1615: Coast Guard collected AreaRAE

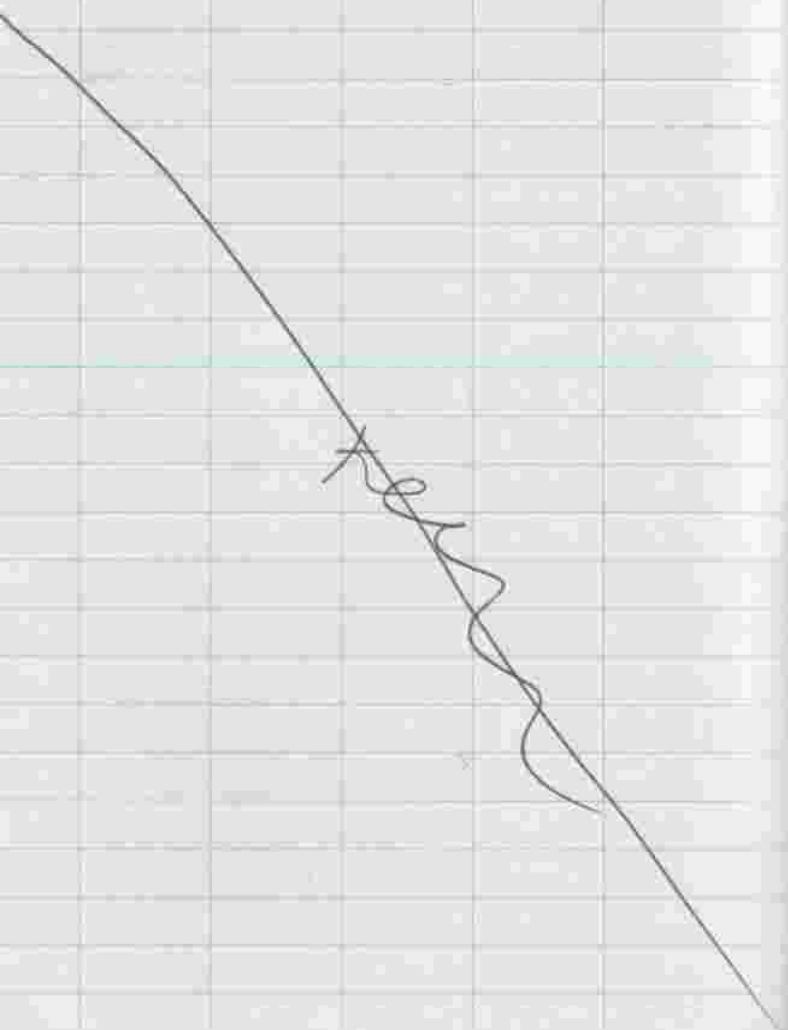
Location Jackson, MI 9/24/15

Project / Client Michner Plating - Mechanic Street USEPA

units to remove HCN sensors. (A)

630: Crews cleaning up for the day.

645: START thomas off site. (B)



Location Jackson, MI Date 9/24/15

Project / Client Michner Plating Mechanic Street USEPA

0700: START thomas on site. Attended site safety meeting. Today's tasks include continue collecting samples from containers; Continue hazcatting samples; transferring containers from office building to staging area. Weather: 57°F, Partly cloudy, 51% Humidity, winds E @ 6 mph. (C)

0720: Crews preparing to enter work zone

0730: Preparing EPA Area RAE units for deployment. (D)

0800: Calibrate AreaRAES: (E)

AR#1	AR#2	AR#3	AR#4
$H_2S = 10$	$H_2S = 10$	$H_2S = 10$	$H_2S = 10$
LEL = 49	LEL = 49	LEL = 49	LEL = 49
HCN = 9	HCN = 9	HCN = 10	VOCs = 100
VOCs = 100	VOCs = 100	VOCs = 19	

0900: Deployed AreaRAE #1 in the CRZ.

0920: Deployed AreaRAE # 2 outside the northern door (open) outside the northern staging area. (F)

0940: Deployed AreaRAE #3 outside (door open) outside Central staging area.

1000: Deployed AreaRAE #4 outside large door where Crew #2 is loading/gathering (F)

Location Jackson, MI 9/24/15

Project / Client Michner Plating Mechanic Street Site USEPA

moving containers to the warehouse staging area.
Backnote: State of Michigan Elevator inspector onsite to inspect elevators in ~~warehouse~~ office bldg.
1000: Crews break. EPA Keith Lesman / START accompanied crews. Reported no elevated readings in the workzones.
1030: Conducted walkaround the site perimeter. No elevated readings detected.
1115: Crews back in workzone. Crew #2 continue gathering containers in the office building, and moving containers to the staging areas; Crew #1 is labeling containers and doing cleanup in staging areas in level C PPE.
Conducted walkthrough of the buildings & work zones. No elevated readings detected.
1200: Crew breaks for lunch.
1330: Crews reenter workzones. Crew #1 back to collecting samples from containers. Also gathering containers from other portions of the building to sample. No elevated readings during air monitoring.
Note: AR #2 is outside door of [illegible] when crew #1 is collecting samples. AR #2 shows low levels of HCN (0.5-1.0). No detections w/

~~9/24/15~~ Jackson, MI Date 9/24/15 53

Project / Client Michner Plating Mechanic Street Site USEPA

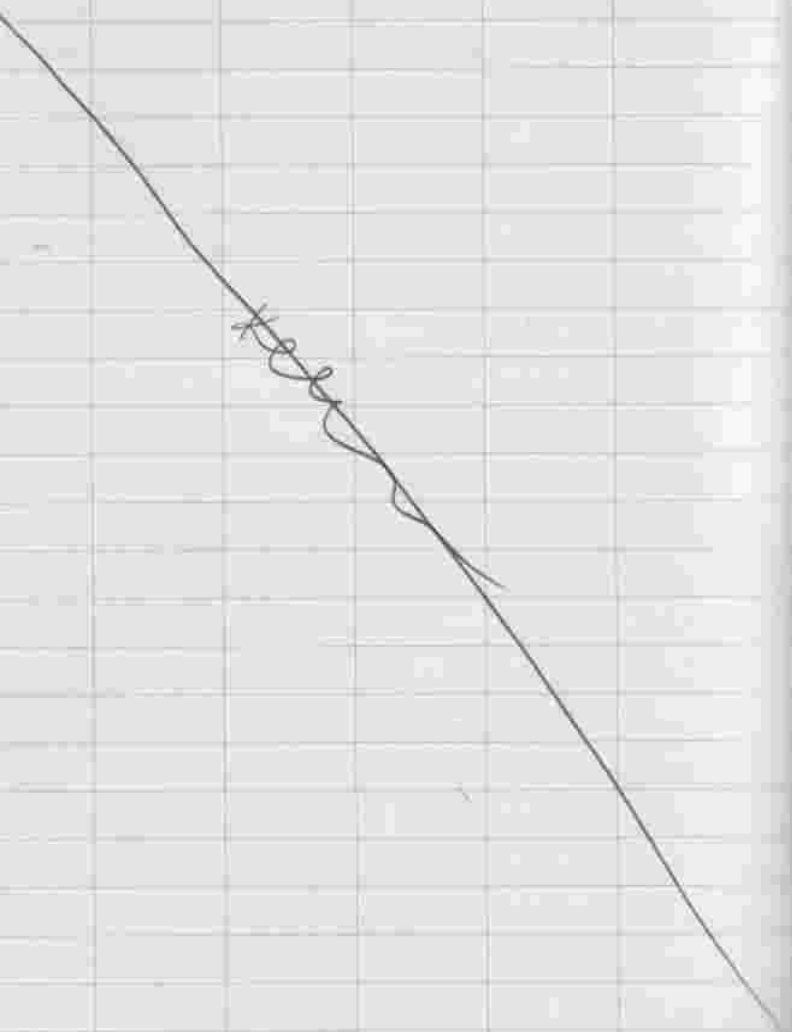
MultiRAE.
Crew #2 is in office building collecting containers.
1430: Crew #1 exits workzone. Crew #1 is waiting for additional containers to be brought into the staging area from office. Crew #1 is going to label vats and other containers to prepare to sample.
1500: Crews break.
1530: Both crews return to workareas. Crew #1 is doing paperwork to prepare to sample vats, tanks, and pits. Labeling of vats will be V001, V002, V003, etc. Labeling of tanks will be T001, T002, T003, etc. and Labeling of Pits will be P001, P002, P003, etc.
Crew #2 is in the office building moving and staging containers on the upper floors near the elevator. Backnote: State of Michigan elevator inspector was onsite looking at the elevator in the office building. Red tagged one elevator which cannot be used, approved one elevator for service.
1630: Crew #1 begins collecting samples from tanks.

Locality: Jackson, MS 9/21/15

Project / Client: Michner Plating Mechanic Street USEPA.

1715. Crews Cleaning up for the day.

1730 START Thomas offsite.



Locality: Jackson, MS Date: 9/22/15

Project / Client: Michner Plating Mechanic Street site USEPA

0700. START Thomas onsite. Attended site safety meeting. Today's activities will include: continue labeling and identifying tanks, vats, and pits for sampling; sample tanks, vats, pits; gather and arrange containers on 2-3 floors of office building; elevator repair technician will be onsite.

0710. Calibrated ArmaRAEs:

AR#1	AR#2	AR#3	AR#4
H_2S = 10	H_2S = 10	H_2S = 10	H_2S = 10
LEL = 49	LEL = 49	LEL = 49	LEL = 49
HCN = 10	VOCs = 100	VOCs = 101	VOCs = 100
VOCs = 100	HCN = 10	HCN = 9	

0750: Deployed ArmaRAEs to fixed locations. Crews are preparing to enter work zones. Crew #1 will enter warehouse to label & identify tanks, pits, and vats; Crew #2 will enter office building to gather and arrange containers.

START leaves to EPA Keith Cesmen entered the building for pre entry survey. Reported no elevated air monitoring readings.

1000: Crew break.

1010 - Deputy Fire Chief David Wooden onsite meeting w/ USC Kimble.

Location Jackson MI 9/22/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

0830. Consumers energy representatives onsite meeting w/ RM to discuss connecting power to the power lines.

0940: Michigan Elevator Inspector and repairmen onsite looking at the elevator in Office building.

1000: Crews return to morning activities. Crew #1 is collecting samples from wells in warehouse. Note: on 9/21, crew #1 collected through sample # 864, and V001 - V008, and T001-T003. START Kane accompanied crew #1 during sampling. Reported no elevated readings during air monitoring.

1030: Conducted walkaround the buildings. No elevated readings detected. Also, waited at AP # 4 (no HCN monitor) for ~5 minutes. No HCN was detected.

Observed Crew #2 collecting and gathering containers in the office building.

1200: Crews break for lunch.

1300: Elevator technicians offsite. Elevator is now working in the office buildings.

1345: Crews return to work zones. Crew #1 continues sampling vats to containers. No elevated readings observed.

1500: Crews break.

Location Jackson, MI Date 9/22/15 57

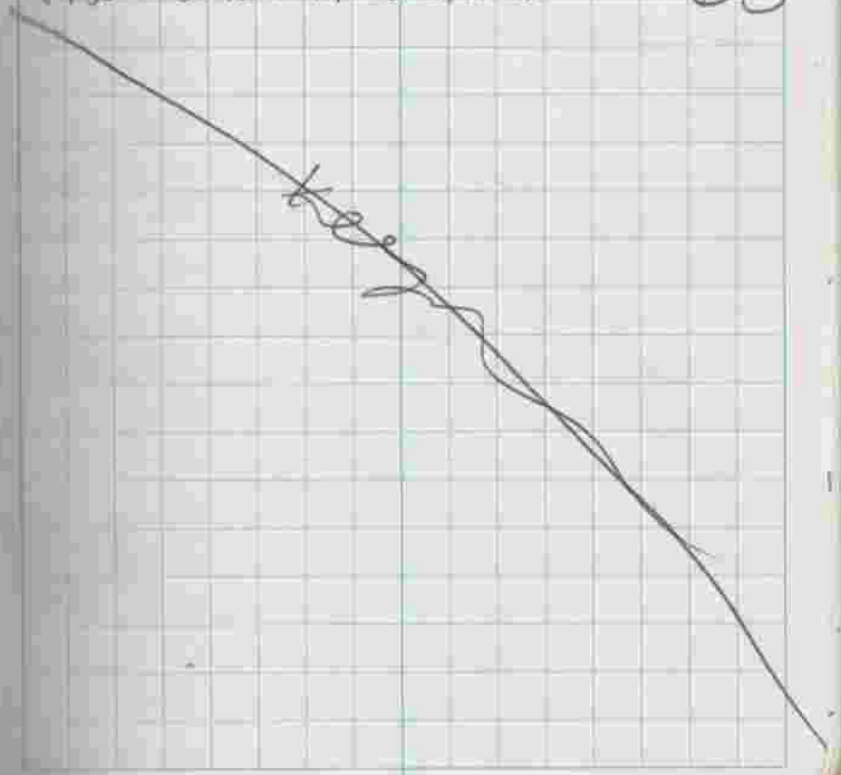
Project / Client Michner Plating Mechanic Street site
USEPA

1600: Crews reenter work zones. Crew #1 collecting samples to crew # 2 bringing containers downstairs in the office building. Crew # 1 is accompanied by START Kane. Reported no elevated readings during sampling.

1700: Crew exit work zones.

1715: Crew closing up for the day.

1730: START Thomas offsite.



Location Jackson, MI Date 9/23/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

700: START thomas onsite. Attended site safety
meeting. Today's tasks include: continue
yesterday's activities. Crew needs to be done
gathering and moving containers out of the office
building today.

Weather: 53°F, Overcast, fog, 71%
Humidity, winds: E@1 mph.

710: calibrated AreaRAEs

AE#1	AE#2	AE#3	AE#4
H_2S = 10	H_2S = 10	H_2S = 10	H_2S = 10
LEL = 49	LEL = 49	LEL = 49	LEL = 49
VOCs = 99.8	VOCs = 100	VOCs = 100	VOCs = 100
HCN = 10	HCN = 9	HCN = 9	HCN

755: Crews enter work zones. Crew #1 continues
collecting samples.

Back note: Crew collected through VOA-V023
and container 865-880 yesterday.

1000: Crews break. Crew #1 continued collecting
samples through container 905. Crew #1 also
labeled containers brought in from the office
building. No elevated readings were detected
w/ MultiRAE except VOCs ≈ 0.5-1 ppm while
crew opened two 5-gallon containers marked flammable

Project / Client Michner Plating - Mechanic Street Site
USEPA

1200: Crew breaks for lunch.

1330: Crews continue sorting activities. Crew
#1 is in the warehouse area sampling containers.
Observed crew sampling vats. Crew used a
shovel to scoop as much of the surface
material to the sides of the containers and
attempted to dig to the bottom of each container
to see if any additional staves were
present in the containers. Crew #1 got 1 hit
of 2.5 ppm on personal HCN monitor. Multirae
detected 1.5 ppm HCN at the time.

1500: Crews break. On site chemist began
bench tests of barricaded samples. Chemist
combined 24 samples of materials tested
as alkalines to combined into a bucket.
Chemist will open bucket in 24 hours
and take a composite to be analyzed
by a laboratory.

1600: Crews return to work areas. Crew #1
is labeling and preparing for tomorrow's sampling.

1700: Crews cleaning up for the day.

1730: START thomas offsite.

Location Jackson, MI Date 9/24/15

Project / Client Michner Plating Mechanic Street site
US EPA

0630: START Thomas onsite. EPA Keith Lesman
alibrated AreaRAEs @ 0610.

AR#1	AR#2	AR#3	AR#4
H_2S =10	H_2S =10	H_2S =10	H_2S =10
EL = 49	LEL = 49	LEL = 49	LEL = 49
OCs = 99.9	VOCs = 100	VOCs = 100	VOCs = 100
CN = 9	HCN = 9	HCN = 9	

645: calibrated MultiRAE Pro.
H_2S =10 LEL = 50 CO = 50 O_2 = 18.0
HCN = 10 VOCs = 11.3

650: Calibrated ERES MultiRAE
H_2S = 10 LEL = 50 CO = 50 HCN = 10 VOCs = 10
655 calibrated ERES HCN Monitors:
HCN = 10.0 on both monitors.
700 - Attended Site Safety meeting. Today's
tasks include: container container, vac, pit, tank
sampling; move corroded drums in central area
and stage on poly sheeting; container bench tests
of haz-catted samples.
745: Crews enter workzone in Level B ppe.
rew #1 is collecting samples from containers & vats.
Crew #2 is moving corroded drums inside central
building to poly sheeting and shoveling material
from the floors to the drums that have not been
sampled.

Jackson, MI Date 9/24/15

Project / Client Michner Plating Mechanic Street site
US EPA

Crew was moving a pallet of drums and one drum spilled ~15-20 gallons of liquid onto the floor. Crew pH'd the liquid pH ≥ 12 S.U. Liquid was soaked w/ absorbant pads, and swept into a drench near the spill. No elevated readings associated with exothermic reaction were detected. Visible dust from moving the corroded containers was observed in the building, however no dust was observed exiting the building into the surrounding areas.
0830 EPA Kieth Lesman conducted perimeter survey of site. No elevated readings detected & no visible emissons of dust observed.
1000 - Crew breaks
1100: crews return to the work area to continue the morning's activities.
Crew #1 is collecting samples from #4.
Monitored the area of the earlier small spill. No evidence of a reaction (effervescence, color change, heat etc) and no detected w/ multiRAE. No elevated readings detected during sampling activities

Location: Jackson, MI Date: 9/24/15

Project / Client: Michner Plating – Mechanic Street site USEPA

1215: Crew breaks for lunch.

1350: Crews prepare to reenter the work zone to continue morning activities. Crew #1 is continuing to sample pits & vats; crew #2 is labeling and setting out sample containers on staged containers.

1445: Crews break. Talked to OSC Hassan about earlier spilled material. Accompanied OSC and START to look for where liquid that was swept into trench drain may have gone. Trench drains appear to lead to pits & be capped before exiting facility. No evidence of uncapped drains. No visible liquid observed. Liquid may have soaked into solid material in drains. No evidence of reactions observed.

1600: Crews reenter work zones. START Kane accompanied crews. Reported no elevated readings during sampling activities.

1630: Conducted walk around the property. No elevated readings detected.

1700: Crews exit work zones. Cleaning up for the day. Crews conducted through sample #9, V050, P00? F008.

1730: START Thomas offsite.

Jackson MI Date: 9/25/15

Project / Client: Michner Plating – Mechanic Street site USEPA

0700: START Thomas onsite. Attended site safety meetings. Today's activities include: continue haz-cating, bench tests, sampling containers. EPA Keith Lesmas calibrating area RAEs and MultiRAE Plus earlier.

0715: Calibrated MultiRAE Pro and ERRS MultiRAE Lite.

Pro: H_2S = 10.0 CO = 51 LEL = 49 O_2 = 18.1 VOCs = 10.75 HCN = 10.0

Lite: H_2S = 9.8 CO = 50 LEL = 50 VOCs = 10 HCN = 10.0

0745: Crews prepare to enter work zone in level B PPE. Crew #1 is collecting samples from the waste water area under Tanks 002–007. Crew labeled the pits as P051A – P051K. Crew #2 is collecting samples from corroded drums in the central staging area.

1000: Crews break. No elevated readings during sampling event. Some visible dust was observed in the central atrium of the building while crew #2 was moving/opening drums. No dust seen exiting the work zone.

Location Jackson, MI Date 9/22/15

Project / Client Michigan Plating - Mechanic Street Site USEPA

START Irene reported that fresh graffiti located on the western wall and fence of the site. (A)

:00: Crews route work zones to continue collecting samples. START Irene also reported crews sampled up to ~460. Crew #1 entered work zone level C PPE to measure and determine volumes of pits, tanks, and vats. (B)

:00. START Irene reported no elevated readings during sampling activities. Crew breaks for lunch.

345: Crews renter work zones to continue many activities. Crew #1 is measuring containers, crew #2 is collecting samples. No elevated readings during sampling. Also START Thomas surveyed drums for additional determination and leaking. Non observed. (C)

:00: Crew breaks

600: crew reenters work zone to continue activities. Crew #1 continues measuring vats, tanks, & pits. Crew #2 continues collecting samples. (D)

No elevated air monitoring readings.

700: Crew cleaning up for the day. Crew #2 collected through container 980. (E)

730: START Thomas off site. (F)

Jackson, MI Date 9/23/15

Project / Client Michigan Plating - USEPA

0700: START Thomas on site. Today's activities include: finish collecting samples from staged containers, if continue hazard categorization to bench tests.

0710: Calibrated MultiRAE Pro and FREDM MultiRAE Lite.

Pro: H_2S = 10.1 LEL = 48 CO = 50 O_2 = 18.1 HCN = 10.0 VOCs = 10.61

Lite: H_2S = 10 LEL = 50 CO = 50 HCN = 10.0 VOCs = 100

0730: US Coast Guard on site. Brought 2 area RAEs (no host computer) and 2 MultiRAE pros. START will continue to use EPA Area RAEs until USCG host computer is back on site. START Irene calibrated and deployed Area RAEs.

0750: Crews preparing to enter work zone. Crew #1 in level B PPE to measure containers and collect samples from vats, pits, tanks. Crew #2 continues collecting samples from drums in the staging area. No elevated air monitoring readings detected during sampling activities. Crew identified one total (container 538) w/ O# ≈ negative 10. Tote is empty

Location Jackson, MI Date 9/28/15

Project / Client Michner Plating - Mechanic Street Site
USEPA

d in good condition w/ no leaking or corrosion.
letal case around the tote is in poor condition
Crew moved to tote to the ~~north~~ ~~east~~ western
rtion of the staging area, placed on poly sheeting
w/ cardboard berms surrounding.
00: Crew breaks. START lead reported that
fresh graffiti was observed on the outer
wall of the building.
00: Crew returns to work area to conduct
mpling activities. Crew # 1 enters warehouse to
mplete canteen sampling. Crew # 2 in office
building gathering shelving for on-site chemist.
00: Crew breaks for lunch.
30. Crew ready to enter work zone. No
sampling will occur until later in the
fternoon. 1 Crew is in the warehouse searching
or additional containers that may have been
issed in initial sweeps and staging in the staging
rea. 1 crew is searching for shelving. ~~Enter~~
START did a ~~sit~~ monitoring event while crew
was in warehouse building. No elevated
readings were detected.
30. START lead to ~~START~~ EPA Cesmar conducted
walk around the perimeter of the site. No elevated

Location Jackson, MS Date 9/28/15 67

Project / Client Michner Plating - Mechanic Street Site
USEPA

readings detected, and no visible dust emissions
were observed.
Backnote: Crew received 12 poly 55-gallon
drums and 2 poly 250-gallon totes
for overpacking.
1300. Crew breaks.
1600: Crew #1 enters warehouse to collect
additional samples. Crew # 2 doing various
office activities. Crew #1 collects through
V058, through sample container 1005.
No elevated readings detected w/ air
monitoring equipment during sampling activities.
1700. Crew cleaning up for the day.
1730: START Thomas offsite.

Location Jackson, MI Date 9/29/15
Project / Client Michner Plating - Mechanic Street site
USEPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities include: collect samples from staged containers, walkthrough both buildings searching for remaining containers; begin bulking alkaline liquids in the warehouse.
0710: Calibrated MultiRAE Pro.
H_2S = 9.8, LEL = 48 CO = 50 O_2 = 18.1
HCN = 10.0 VOCs = 10.76
0715: Calibrated ERRS HCN monitors
#1 HCN = 10.0 #2 HCN = 10.0
0748: Crews prepare to begin and enter work zone.
Crew #1 enters warehouse to collect samples from staged containers in staging areas. START Kane accompanied crew #1. Crew #2 is completing various office & site cleanup tasks ie helping inventory input data, stacking samples, etc.
START Kane reported no elevated readings during sampling activities. USCG completed a walk through the building and around the site perimeter. No elevated readings on the air monitoring equipment.
1000: Crew breaks.
[illegible]: Crew returns to work zone. Crew #1 is measuring vats, tanks, & pits.
1200: Crew breaks for lunch

Location Jackson, MI Date 9/29/15 69
Project / Client Michner Plating - Mechanic Street site
USEPA

1330: Crews preparing to re-enter work zones. Crew #1 is going to enter office building to collect samples from the basement to 1st and third floors. Crew also collecting transferable containers (drums, bags, buckets) to ~~the~~ in order to the staging area in the warehouse building.
1400: Conducted a perimeter walk around the site. No elevated readings were detected w/ air monitoring equipment and no visible emissions were observed.
1500: Crew breaks
1600: Crews enter work zone. Crew #1 continued collecting samples from the staged containers. Crew #2 is bulking alkaline liquids. Crew has a list from onsite chemist of 29 containers w/ alkaline liquids. Crew is gathering containers one at a time and pouring liquid into a 350-gallon tote. Any sludge/solid layer will be poured into a new 55-gallon drum. Crew is marking the tote w/ the first container poured into it, and subsequent totes/drums in this group will be labeled the same. Observed crew pour liquids into

Location Jackson, MI Date 9/29/15

Project / Client Michner Plating - Mechanic Street Site/USEPA

...ote slowly, then wait to see if any reactions were observed, then pour more from the same container, unit, etc. Crew staged tote and drum on top of poly sheeting surrounded by wood berms as a spill protection. (KL)

...00: Crews exiting work zone. Crew labeled empty containers that have been emptied into tote and set containers aside as empty. (KL)

...30: Crew cleaning up for the day.

...745: (KL) START Thomas offsite.

Jackson MI Date 9/30/15 71

Project / Client Michner Plating - Mechanic Street Site USEPA

0700: START Thomas onsite. Attended Site Safety Meeting. Today's activities include: continue bulking alkaline liquids. (KL)

Backnote 0600: (KL) EPA Keith Lesman calibrated AreaRAE units (KL)

AR #1	AR #2	AR #3
H_2S = 10	H_2S = 10	H_2S = 10
LEL = 49	LEL = 49	LEL = 49
HCN = 49 (KL)	HCN = 10	HCN = 9
VOCs = 100	VOCs = 100	VOCs = 100

(KL)

0620: EPA Keith Lesman calibrated MultiRAE Plus: O_2 = 20.9, VOCs = 100 LEL = 44 H_2S = 25 HCN = 100 (KL)

0710: Calibrated MultiRAE Pro & ERRS MultiRAE Pro H_2S = 9.9, LEL = 49, CO = 51 O_2 = 18.0 HCN = 10.0 VOCs = 10.74 (KL)

Lite: H_2S = 10 LEL = 50 CO = 50 HCN = 10 VOCs = 100

0730: Calibrated ERRS HCN units (KL)

#1 HCN = 10.0 #2 HCN = 10.0

0750: 2 crews entered work zones. Crew #1 entered Office building to measure vats & containers sampled; Crew #2 in warehouse building continuing to bulk aqueous alkalines. START Kane accompanied.

Location Jackson, MI Date 9/30/15

Project / Client Mechner Plating - Mechanic Street Site/USEPA

900: Conducted a perimeter survey. No elevated readings detected w/ air monitoring equipment. ns ite chemist is taking representative samples from ocket tests to submit for laboratory analysis. Submitted 3 samples.

000: Crew breaks. START were reported that crew #2 ~~had to~~ poured 4 containers of liquid alkalines into a tote labeled 032. Solid portion f the containers were poured into a drum labeled s 042.

00: Crews return to work zones. Crew #2 is continuing bulk materials. Crew used drum tipper to pour id portions of drum 109 and 110 into the open drum. No spills or reactions observed during bulking o elevated readings detected w/ air monitoring equipment ote: Bulking log sheets are being kept for a specific ord of bulking activities.

00: Crew breaks for lunch.

30: Crews continue morning activities. Crew #1 is in the office building. Crew #2 is in the warehouse building transferring / bulking alkaline liquids. START is accompanied.

430: Conducted a perimeter walk around the site. No elevated readings or visible dust was observed.

Jackson MI Date 9/30/15 73

Project / Client Mechner Plating - Mechanic Street Site USEPA

1500- Crew breaks. START local reported one drum needed to be cut open using ~~sawzall~~ Sawzall. START recorded no elevated LEL readings from the drum. VOCs were detected above the level B action limits ~~but not~~ inside the headspace in the drum, but no elevated readings were detected in the breathing zone.

1600 Crews re-enter work zone. No elevated readings detected in the breathing zone. Crew filled tote -032 midway through container 253. Crew cleaned and sealed tote -032, and labeled a new tote for bulking - 253. Crews are still bulking solids from alkaline liquid containers in drum - 042.

1715: Crew Cleaning up for the day.

1730 - START Thomas offsite.

Location Jackson, MI Date 10/1/15

Project / Client Michner Plating Mechanic Street Site USEPA

700 START Thomas onsite. Attended Site Safety
eeting. Today's activities include: Continue
hazard categorization, bucket tests, bulking
materials. ——— (initials)
710: Calibrated ERRS MultiRAE Lite: ——— (initials)
S=6.1 CO=51 LEL=49 HCN=10.0 VOCs=100
alibrated ERRS HCN Monitors
CN= 10.0 in #1 #2: HCN = 10.0 ——— (initials)
735: Crews preparing to enter work zones
rew #1 is in the office building. Crew #2 in the
arehouse building bulking alkaline liquid containers.
00: Crew breaks. Crew finished bulking 2
drums w/ alkaline liquids. One drum contained
very hard solid material. Crew had to chisel solid
o pour into the solids drum.
0: Crew return to work areas to continue morning's
ctivities. START Kane accompanied crew #2 into
are house to continue bulking Alkaline liquids.
30: Conducted a perimeter walk around the site
No elevated readings or visible dust observed.
50: Crews break. START Kane reported no visible
eactions or elevated readings during bulking.
200: Crew breaks for lunch. Crew #2 finished
rst batch of 24 alkaline liquids bulking.

Jackson, MI Date 10/1/15

Project / Client Michner Plating ~~St~~ (initials) Mechanic Street Site USEPA.

1300: Crews return from lunch. Crew still
waiting on new list of bulking containers.
Crew entered the warehouse to sweep and clean
in the tote staging (bulking) area. ——— (initials)
1430: Attended Site Daily Planning meeting
- Chemist conducted hazard categorization (initials)
- Crew did ~~all~~ (initials) bulking of non-cyanide alkaline
liquids into 1.5 totes & 1 drum of solids
& sludges from the non-cyanide alkaline containers
- Monday delivery planned for drums, totes,
and cubic yard bags & boxes. ——— (initials)
- Bags and boxes are Y3 rated for cyanides.
- Electric company is coming onsite tomorrow to
try and connect the trailers hardwire to the
power running lines. ——— (initials)
- ~~will~~ (initials) Crew will cut up empty drums to dispose
the drums in a hazardous waste roll-off
dumpster. Crew will ensure that cyanide
drums are segregated from acid drums.
Backnote: 1400 Crews continued cleaning
in the ~~st~~ (initials) tote staging area, sweeping,
moving empty drums out of the area. ——— (initials)
1500: Crew breaks ~~for lunch~~ (initials)
1600: Crews back in work zone. Crew #2

Location Jackson, MI Date 10/1/15

Project / Client Michner Plating, Mechanic Street S.tc USEPA

is in the warehouse moving and staging more drums w/ alkaline liquids to prepare for bulking activities tomorrow.

700: Crews cleaning up for the day.

730: START Thomas off site.

Location Jackson, MI Date 10/2/15

Project / Client Michner Plating, Mechanic Street S.tc USEPA

0700: START Thomas on site. Attended Site Safety Meeting. Today's activities will include: continue haz-cutting samples, continue bulking; shovel solid material in the berm around tanks T009 & T010; catelog and move small containers for lab packs.

0710: Calibrated ~~Ace~~ MULTIRAE Pro and FREE's MultiRAE Lite

Pro: H_2S = 10.1 LEL = 51 CO = 99 O_2 = 18.0 HCN = 10.0 VOCs = 12.37

Lite: H_2S = 10.0 LEL = 49 CO = 50 HCN = 100 VOCs = 100

0730: Crews prepare to enter work zones. Crew # 1 is in Level B PPE and will shovel solid material in the berm around T009 & T010 and collect a sample of the material. Crew # 2 is in Level C PPE and will be containing alkaline liquids from drums w/ mostly solids into a 55-gallon drum.

0900: Crew breaks. Crew # 1 was shoveling around tanks T009 and T010 and hit a pipe connected to T009; the tank is mostly empty. About 5 ounces of liquid

Location Jackson, MI Date 10/2/15

Project / Client Michner Plating, Mechanic Street site/ USEPA

from the tank spilled into the berm before it was plugged. Crew put vermiculite to soak up the liquid to continued shoveling. Crew collected a sample of the swept material. Crew #2 was transferring liquid into a drum from ~~second~~ B drums of alkaline liquid.

Talked to OSC about lists of bulking material going forward.

1000: Crew breaks.

Back on site: At 0900: Reps from A+ Electrical Services onsite working on connecting office trailers to area electrical lines.

1130: ERT a separate EERS contractor) onsite to de-mob the Haz-Cat trailer offsite. Crew #1 enters office building in Level B PPE to collect one sample from a vat that the onsite Chemist would like re-sampled.

1200: Crews break for lunch. After lunch crews plan to continue morning's activities.

START Tone will be onsite to observe afternoon activities.

1230: START Thomas offsite.

Location Jackson, MI Date 10/5/15

Project / Client Michner Plating Mechanic Street Site/ USEPA

0700: START Thomas onsite. Attended Site safety meeting. Today's activities include: Continue bulking alkaline solids; continue haz-cat sampling; continue bulk testing.

0710: Calibrated Multi RAE Pro and MultiRAE Plus: O_2=18.1 LEL=48 CO=50 H_2S=10.1 HCN=10.0 VOCs=10.78

Plus: H_2S=10.1 LEL=49, O_2=20.9 HCN=10 VOCs=100

START Tone calibrated and recorded calibration for ERTS MultiRAE Lite and ERTS HCN monitor

0745: Crews prepare to enter work zone. Crew is going in in Level C PPE to shovel solid alkaline materials into drums. Solid alkaline solids are very hard and compacted. START Tone accompanies crew in work zone.

0750: Electricians onsite to attempt to connect office trailers to area power lines.

1000: Crew breaks. START Tone reported no elevated readings w/ air monitoring equipment during bulking activities. Crews are bulking solid materials (alkaline; non-cyanide containing). The material is very compacted, and is taking a lot of time and energy to break up the

Location Jackson, MT Date 9/5/16

Project / Client Mitchner Plating Mechanic Street Site
USEPA

material by hand. Crew will continue doing by hand until they receive air pump (power tool for breaking up materials). Crew #2 is cataloging and segregating small containers of lab packable containers.

1035: Crew recives 15 totes & 60 drums for bulking. Also recieved super sacks & wood pallets. Crew are staging new drums, totes, pallets, and super sacks in the building.

1200: Crew breaks for lunch.

1330: Crews reenter work zone to continue many work activities. Crew #1 (Tam Techs) in level C PPE are going through small containers and labeling containers to recording label information. Crew #2 is in level C PPE repackaging alkaline material (liquids, sludges, solids) into new drums. Some of the material are mixed (bulked) where containers are not full from one drum. Some of the material is very hard (glass-like material) and difficult to break apart using hand shovels. Crew put these containers off to the side and began going for containers w/ looser materials. Crew will come back to other containers once they recieve air compressor and mechanical digging tools.

Location Jackson, MT Date 10/5/16

Project / Client Mitchner Plating - Mechanic Street Site
USEPA

1500: Crew breaks. No elevated readings or reactions observed during work activities. 5 EPA personnel onsite w/ OSC observing site activities.

1600: Crews re-enter hot zone to continue activities. START leads accompanies crews.

1630: Attended Daily work Activities meeting.

- Crew continued hot cutting materials.
- Crew waiting for air compressor for air hammer to break up very hard materials. EQUIS expect ~2 weeks before compressor is available.
- Electricians supposed to be done w/ power to power grid by Friday.

Tomorrow's activities:
- complete electrician's work
- continue todays activities

7:15: Crews exit work zone. START lead reported no elevated readings during work activities.

1720: Crews Cleaning up for the day.

1730: START Thomas offsite.

Location: Jackson, MI Date: 10/6/15

Project / Client: Miller Plating - Mechanic Street Site USEPA

0700: START Thomas onsite. Attended Site Safety Meeting. Today's activities include: continue transferring alkaline solids (if rock hard solids are encountered crew will determine a new waste stream and move to that one); continue hazcat-ing to bulk testing. ——— (TC)
Weather: 56°F, 96% Humidity, no wind Dense fog, low visibility ——— (TC)
0715: Calibrated MultiRAE Pro:
~~H_2O~~ (TC) O_2 = 18.1 H_2S = 10.1 LEL = 50 CO = 48
HCN = 10.0 VOCs = 10.76
0720: Calibrated ERRS HCN monitors
~~#~~ (TC) HCN #1 = 10.0 HCN #2: 10.0
0740: Crews prepare to enter work zone. Crew #1 is in the northern room categorizing and separating small containers on pallets. Crew #2 will continue ~~n~~ packaging drums w/ solids. Solid materials are very hard. Crew is having a difficult time getting materials out of the drums. Crew encountered one drum that made the ERRS personal HCN monitor alarm. No elevated readings on the MultiRAE directly following the alarm, and no elevated readings w/ personal monitor after initial alarm. The alarm was likely the result of

Location: Jackson, MI Date: 10/6/15

Project / Client:

a small pocket of HCN gas in the solid that dissipated quickly. ——— (TC)
1000: Crew breaks. EPA with US[illegible] and USCG conducted a perimeter walk, no elevated readings. ——— (TC)
Backnote: USCG AreaRAE #2 alarmed w/ VOCs > 500ppm and HCN maximum at [illegible] START walked over to the location and all air monitoring levels were 0 w/ the MultiRAE. USCG took the unit and performed maintenance due to the false positive (TC) readings. —
1100: Crews return to the morning work areas. START [illegible] reported no elevated readings du[ring] activities. ———
1200: Crews break for lunch. ———
1330: Crews return to work zones to complete morning's activities. Crew #2 has encountered several poor condition drums w/ very hard m[aterial]. Crew is breaking the drums and breaking the material w/ hammers and axes on poly sh[eeting]. No elevated air monitoring readings detected. ERRS Foreman reported crew will get a ne[w] list of containers of flammable materi[als] tomorrow and will begin bulking. ———

84

Location Jackson, MI Date 10/6/15

Project / Client Michner Plating - Mechanic Street Site USEPA

1500 Crew breaks.

1545 - Crew returns to work area to continue activities in work zone.

1630 Daily work activities meeting:
- 2 composite samples offsite today
- No HAZ cutting today - only composite sampling work off site work today.
- 6 drums transferred today, 4 very hard containers remain untransferred
- Finished cataloging small can fames

Tomorrows activities:
Same as today except ESPs will consolidate flammable liquids to sludges into drums (steel).

1715 - Crews cleaning up for the day.

1730 - START Thomas offsite.

Location Jackson, MI Date 10/7/15

Project / Client Michner Plating - Mechanic Street USEPA

0700 - START Thomas on site. Attended S Safety Meeting. Today's activities will include: Finish alkaline solids transfe Start working on new lot of flammable sludges to solids; continue hazcat sampled materials.

0710 - Calibrated MultiRAE Pro & ESP MultiRAE Lite:

Pro: H_2S = 10.1, LEL = 47, O_2 = 17.9, CO = 4 HCN = 100 VOCs = 1037

Lite: H_2S = 10.1 LEL = 50 CO = 49 HCN = 100 VOCs = 124

0730 - Crew prepare to enter work zone; Cre #1 is working to identify containers co new flammable solids bulking lot. Crew # 2 is finishing transferring con co of Container 941 to new drum.

0830 - Crews finished transferri last container (other than the three containers with material that is to hazcat) of alkalin materials identified. Crew is cleaning up bulking areas, moving transferred drums, to staging new containers in bulking area.

0845 - Reps from Consumers Energy on

Location Jackson, MI Date 10/7/15
Project / Client Michigan Plating – Mechanic Street Site
USEPA

working on hooking connections to power grid.
0930: Consumers Energy offsite. Electricians will be back onsite later this week to finish connecting trailers to power grid.
1000: Crew breaks.
1100: Crews reenter work zone. Crew #1 is gathering containers in the next group (flammable gels, solids, sludges). Crew will separate the group into 3 bulking groups (identified as COMP 2-(Resins; Aluminum Paints; Others). Crew begins by bulking Resins. Some of the resins are difficult to extract from their containers. Crew having difficulty cutting containers and scooping materials out bc resin is very sticky. Crew completed 1 container and half of 2 other containers. Air monitoring levels were background except VOCs. VOCs > 300 ppm in the drum during bulking operations. VOCs ≈ 3-4 ppm in breathing zone.
1200: Crew breaks for lunch.
1330: Crews return to work areas to continue morning activities. START Kane accompanied.
1430: USCG and EPA Lesnick completed perimeter walk w/ air monitoring. Did not observe any elevated readings along the perimeter and no visible emissions.

Location Jackson, MI Date 10/7/15
Project / Client Michigan Plating – Mechanic Street S...
USEPA

1500: Crew breaks. START Kane reported no elevated readings except high VOCs inside the drums during bulking.
1600: Crews return to work areas. Crews are working on bulking flammable solids list. Crew completed flammable resins subgroup. Air monitoring in the area of bulking showed VOCs as high as 200 ppm in the breathing zone. ERRS is working on an amendment to the site HASP bc current C-B PPE Action Limit is 5 ppm for unknown VOCs. No other parameters identified in the breathing zone during operations.
1715: Crews cleaning up for the day. START Kane attended Daily Work order Meeting; Crew will finish flammable solids list tomorrow and begin flammable liquids list. Electricians will also be on site to finish connecting trailers to local power lines.
1730: START Thomas off site.

Location Jackson, MI Date 10/8/15
Project / Client Michner Plating - Mechanic Street Site
US EPA

0700: START Thomas Onsite. Attended Site Safety meeting. Today's tasks include: continue hazcating samples; finish bulking flammable solids list; Start new bulking list (flammable liquids); Electricians will finish connecting trailers to local power lines ——— (initials)

0710: Calibrated MultiRAE Pro to MultiRAE plus
Pro: LEL=48 CO=50 H_2S=10.1 O_2=17.9
HCN=10.0 VOCS=1059 ——— (initials)
Plus: LEL=48 CO=50 H_2S=10.1 HCN=8 VOCs=

0730: Crews prepare to enter work zone. ERRS RM distributed HASP Amendment. New VOC action limit is 100ppm (based on lowest known chemical of concern, Xylenes) sustained for 10 minutes

0745: Crews enter work zone. Crews finishing up flammable solids. VOCs when opening drums is >100ppm but ~~due to~~ (initials) crew is moving fast and no readings sustained for >10 minutes. Crew covered open drums which will be overpacked with poly sheeting. Crew staged finished drums in the northern room, marked the area w/ caution tape and ~~labeled~~ (initials) labeled a cardboard marking in the area.
1000: Crew breaks. ——— (initials)

Location Jackson MI Date 10/8/15
Project / Client Michner Plating Mechanic Street Site
USEPA

1100: Crew returns to work area to continue bulking flammable liquids. START Kae accompanied ——— (initials)

1130: USCG getting VOCs = 5.0ppm at northern property (building boundary). USCG START walked to the area. USCG moved another AreaRAE to the area and START used MultiRAE. Both the MultiRAE & new AreaRAE show VOCs ≈ 1.5-2.0 ppm. USCG fresh air calibrated AreaRAE & will observe the unit. ———

1200: Crew Breaks for lunch. ———

1330: Crews return to work zones. Crew is transferring flammable liquids to new drums. VOCs > 100 ppm various times throughout the transfer (bulking), but not sustained > 10 minutes. VOCs would max when drums were opened, but would fall in the breathing zone soon afterwards. One drum (157) had VOCs > 100ppm for greater than 10 minutes. ~~Crew~~ (initials) Drum contained a sludge solid material and crew worked on the drum for > 10 minutes. ERRS stopped working on the drum & covered w/ poly and will overpack

1500: Crew breaks. ———

90

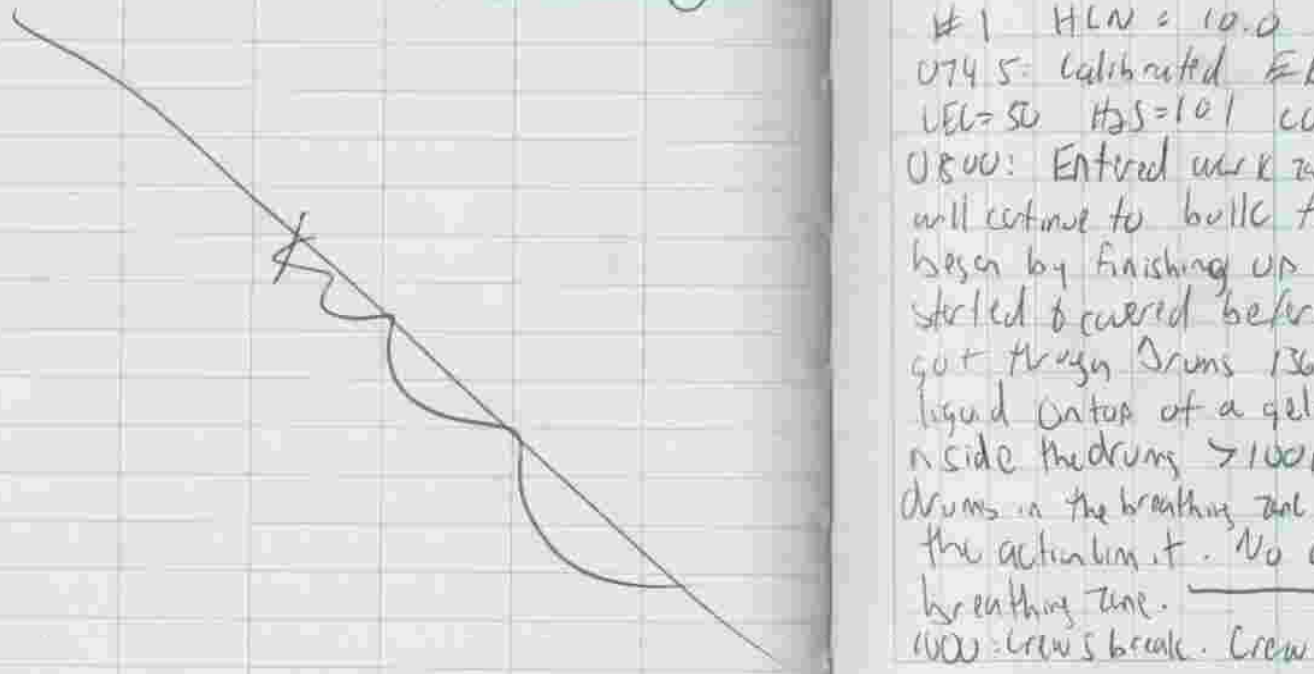
Location Jackson, MI Date 10/8/15

Project / Client Michner Plating Mechanic Street Site USEPA

1505: ~~Level B~~ START to USC 6 in Level B ppe to photo document drums 631 - 671. HCN > 2ppm throughout EERS sampling, so START entered in Level B. Drums were in very poor condition w/ some totally corroded away, leaving just the material w/ no visible drum left.

1555 START Exits hotzone. EERS enters in Level C ppe to clean up & secure the building for the weekend.

1700: START Thomas off site



Location Jackson MI Date 10/14/15

Project / Client Michner Plating Mechanic Street Site USEPA

0700: START Thomas on site. Attended site safety meeting. Today's activities will include: continue hiking flammable liquids to solids; electricians will be on site to hard wire EPA A/C trailer to on site generator; contractors will be on site to build a decon to the garage where EERS dresses out; Chemrock will create a composite of wet materials to EERS may begin shoveling vats.

0730: calibrated EERS HCN meters: #1 HCN = 10.0 #2 HCN = 10.0

0745: calibrated EERS MultiRAE Lite: LEL = 50 H2S = 10.1 CO = 51 VOCs = 103 Hexane

0800: Entered work zone w/ EERS crew. EERS will continue to bulk flammable liquids. EERS began by finishing up drum #166. 166 was started & covered before break. Crew also got through drums 136 to 199. Drums contain liquid on top of a gel-type sludge. VOCs inside the drums >100 ppm but around the drums in the breathing zone, VOCs did not exceed the action limit. No other detections in the breathing zone.

1000: Crew's break. Crew recieved a delivery

92

Location Jackson, MI Date 10/14/15

Project / Client Michaan Plating Mechanic Street USEPA

ty (R) 5 xL Scranek suits & other PPE. Crew also recieved an air compressor & air jackhammer to break up very hard solids. (M)

1100: Crews return to work zone to continue morning activities. A second team enters work zone to assist shoveling vats of alkaline solids w/ cyanide. Team will enter in level C PPE to begin shoveling out of vats into 1 yd³ boxes. START zone accompanied ERRS crew. (N)

1200. Crew breaks for lunch. (O)

1230: Recieved USCG respirator cartridges to Scott cartridges for START & EPA respirators.

1300: Crews return to morning activities. (P)

Crew #1 continues to bulk flammable materials. Crew #2 continues shoveling alkaline solids into wide yard boxes. Material on top is softer & able to be shoveled. (Q) Approximately 1 foot (R) of material on the bottom of the vats is hard to unable to break up. ERRS will use jackhammer and air compressor to break material. NO air monitoring readings above action limits detected. VOC's detected ≈ 0.5-1.5 ppm in the area of the vat activities (S)

1630. Attended Daily Work Order meeting:

Location Jackson MI Date 10/14/15

Project / Client Manner plating Mechanic street USEPA

- Finish up the flammable liquids today "Composite 3". OSC noted splashing when transferring material from one drum to new drum (T)
- Tommorow crew should begin Comp 4 flammable liquid bulking list.
- Air sampling should be done this week by ERRS chemist.

1710: Crews exit work zones. Crew #1 continued bulking flammable materials (U) Crew will finish up flammable materials list "Comp (V) 3" tommorow and begin new bulking list to will continue shoveling va

1715: Crew cleaning up for the day.

1730. START Thomas offsite.

94

Location: Jackson, MI Date: 10/15/15

Project / Client: Michae Plating Mechanic Street SC USEPA

0700: START Thomas on site. Attended Site Safety Meeting. Today's activities include: Continue hazardous samples, continue bulking flammable liquids & solids, continue shoveling caprolactam contaminated soils.

0710: ~~Calibrated~~ & bump tested MultiRAE Pro & Ellis MultiRAE Lite

Pro: H_2S=21.0 VOCs O_2=18.1 LEL=48, CO=51 VOCs=10.67 HCN=10.5

Lite: H_2S=0.1 LEL=46 CO=48 HCN=115 VOCs=100

0730: Calibrated Ellis HCN Monitors

#1 HCN=10.0 #2 HCN=10.0

0740: Calibrated MultiRAE Plus:

H_2S=10.1 LEL=48 O_2=20.8 HCN=10.0 VOCs=100

0745: Crews prepare to enter work zone. Crew # 1 continues repackaging & bulking flammable liquids and solids into new drums in Comp 3. Crew # 2 continues scooping & jackhammering solid in Unit 004. Crew # 2 HCN monitor alarmed during activities w/ HCN=2.5 ppm. START to Ellis went into the area following the exceedance and all monitors showed HCN = 0.5 - 1.0 ppm.

Location: Jackson, MI Date: 10/15/15

Project / Client: Michae Plating Mechanic Street SC USEPA

Ellis will continue to work in level C PPE due to the short time frame of exceedances & will observe for packets of HCN or potential reactions. VOCs ≥ 150 ppm in the drums Crew # 1 is bulking, but no exceedances in the breathing zone. VOCs ≥ 5 - 50 ppm in breathing zone w/ bulking activities.

1000: Crews break.

1100: Crews prepare to reenter work zones to continue activities. Crew # 1 finished Comp # 3, cleaned up area of bulking & prepared to move on to Comp # 4 (flammable liquids)

1130: Crew receives a shipment of steel drums. Some drums have a bung at the bottom of the drum. Ellis will check to see if these are acceptable to refill bulk materials in. One drum was also received w/ an unknown liquid (less than 5-gallons). Our chemist will determine characteristics of the liquid, which is most likely water condensate in the drum during transport.

1200: Crew breaks for lunch.

1630: Attended Daily Work Order Meeting.

Location Jackson, MI Date 10/15/15
Project / Client Michner Plating Mechanic Street Site
US EPA

- Finished 3 cubic yard boxes of cyanide containing solid materials. (initials)
- OSC wants ERRS to pump more of the liquid instead of pouring liquids with potential of splash.
- Check into structural integrity of roof prior to snow storms in case of heavy storms.

1715: Crews cleaning up for the day (initials)
1730: START Thomas offsite. (initials)

(signature)

Location Jackson, MI Date 10/16/15
Project / Client Michner Plating Mechanic Street Site
US EPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities will include: continue bulking flammable liquids, continue bulking cyanide containing alkaline solids from vats, finish hazcating coll... samples. (initials)
0710: Bump tested MultiRAE Pro & ERRS MultiRAE Lite (initials)
Pro: H_2S = 10.1 CO = 47 LEL = 48
O_2 = 20.7 VOCs = 1008 HCN = 11.0
Lite: H_2S = 14 LEL = 43 ~~O_2~~= (initials) CO=...
VOCs = 100.9 HCN = 10.5
0730: Calibrated ERRS HCN monitors.
#1: HCN = 10.0 #2: HCN = 10.0
0740: Calibrated ~~E~~ (initials) MultiRAE Plus:
H_2S = 10.1 LEL = 50 O_2 = 20.9 VOCs = 100...
HCN = 10.0 (initials)
0745: Crews prepare to enter work zones. START Kane accompanied crews. Crew #1 continues bulking flammable liquids in comp 4. Crew #2 continue shoveling to bulking cyanide containing alkaline so... from vats. START Kane reported one drum had VOCs > 2000 ppm & LEL = 14%. Cr...

Location: Jackson, MI Date: 10/16/15

Project / Client: Michner Plating Mechanic Street Site / USEPA

backed away from the drum & [initials] and will bulk the contents after the drum has time to air out. Note: Readings are in the bunghole of the drum, No elevated readings detected in the breathing zone. —— [initials]
1000: Crew breaks —— [initials]
1100: Crews reenter work zones to continue activities. Crew #1 continues bulking flammable liquids. Crew #2 is shoveling solid material from V012 into Cubic yard boxes. VOCs detected above 100 ppm while crew is opening drums however VOCs decreased after drums have aired out [initials] for about 5 minutes. Crew #2 encountered HCN > 2.0 ppm for limited time (less than 10 seconds). Crew exited work zone with the exceedance, and reentered the work zone once HCN decreased. —— [initials]
1200: Crew breaks for lunch —— [initials]
1330: Crews reenter work zones to continue morning activities. Crew #1 finishes Comp 4 (flammable liquids bs. acids list). Crew #2 continues shoveling V012. —— [initials]
1630: Crew #1 is cleaning up the bulking area and preparing for additional bulking next week. Crew #2 continues shoveling
1715: Crews cleaning up for the day
1730: START Thomas offsite. —— [initials]

Location: Jackson, MI Date: 10/19/15

Project / Client: Michner Plating Mechanic Street Site/USEPA

0700: START Thomas onsite. Attended site safety me[eting]
Today's tasks include: Continue shoveling cyanide containing alkaline solids in vats; Conti[nue]
begin bulking flammable liquids in Comp 11 —
0710: Calibrated MultiRAE Pro & EES MultiR[AE]
Pro: O_2 = 18.0, CO = 50, LEL = 48, H_2S = 100 —
HCN = 10.0, VOCs = 11.63 ——
Lite: LEL = 50, CO = 51, H_2S = 101, HCN = 10.0 VOC[s]
0745: Crews prepare to enter work zones. Crew #1 is bulking flammable materials in Comp [11]
Crew #2 is bulking cyanide containing alkalines in vats. Materials in the vats are very hard so[lids]
Crew is using jackhammer to break up the mat[erial]
~~Crew #1 is~~ [initials] VOCs in flammable bulking area ≈ 50–100 ppm in breathing zone through[out]
activities. No elevated HCN readings detected.
1000: EPA Lesniak & USCG conducted a p[...]
walk around. No elevated readings detected [by]
air monitoring equipment. —— [initials]
Crews break —— [initials]
1100: Crews return to morning activities. START Kane accompanied crews. Crews continue morning activities. START Kane reports that Crew #1 completed Comp 11 list. Crew #2 completed

100

Location Jackson, MI Date 10/19/15

Project / Client Michner Mechanic street SITE / USEPA

Vat VO12. VO12 filled ½ of one ~~vat~~ (A) cubic yard box. ~~Crew~~ filled the rest of ~~the vat~~ (B)

1200: Crew breaks for lunch. (C) (D)

1330: Crew returns to work areas. Crew # 1 completes Comp #11 and begins pumping liquid from drums 698, 944, 947, and 950 into point drums. Crew #2 filled the last cubic yard box from vat VO12 w/ solid material from VO10. After finishing the box, crew stepped back on VO10 and began transfer material from VO01 to clean yard boxes. VO01 has to remain separate from other vats due to known reactive CN concentrations detected in the START Site Assessment. No elevated readings identified in the breathing zone during activities. (E)

1500: Crew breaks. (F)

1600: Crew re-enters work zone to complete investigations. START leave accompanied crew. (G)

1700: Attended Daily Work Order Meeting. (H)

- EERS will look into increasing the Action Limit of HCN above 2.0 ppm.
- Chemist Hazcutted ~~20~~ (I) 50 samples.
- Tomorrow crew will continue w/ todays bulking activity. Chemist will be off site so no hazard categorization. (J)

Location Jackson MI Date 10/19/15

Project / Client Michner Mechanic Street Site Removal / USEPA

[715: Crews clearing up for the day.
1730: START Thomas off site.

102

Location Jackson, MI Date 10/20/15

Project / Client Michner Plating Michens Street site / USEPA

0700: START Thomas on site. Today's activities include continue bulking Cyanide containing alkaline solids from vats => specifically vat V001; continue bulking alkaline liquids, sludges, solids with Cyanide in Compost #1.

0730: Crews prepare to enter work zone. Crew #1 will continue pumping liquid off of drums with alkaline liquids to sludges; crews will begin bulking the solids from the drums; ~~crews~~ Crew #2 will continue shoveling (bulking) cyanide containing alkaline solids from vat V001. START Kane accompanied crews.

0830. Crews were having one HCN monitor consistently alarm. Recalibrated HCN #[illegible] monitor #1 — HCN = 10.0

0900. Calibrated MultiRAE Pro:

O_2 = 18.4, CO = 49 LEL = 42 H_2S = 9.8

HCN = 9.0 VOCs = 11.48

1000: Crews break. START Kane reported Crew #2 was experiencing short exceedances of HCN during activities. No readings > 2.0 ppm HCN were observed for greater than a few seconds —

1100: Crew reenters the work zone to continue activities. Crew #2 continued transferring cyanide containing alkaline solids from vat V001 into cubic yard boxes. HCN was detected up to 3.5 ppm

Location Jackson, MI Date 10/20/15

Project / Client Michner Plating Michens Street site / USEPA

during activities for short periods of time however while crew was jackhammering the material likely due to the jackhammer hitting pockets of HCN in the material. HCN decreased below AL on within a few seconds each time.

Crew #1 continued transferring sludge and solids in Comp #14. no elevated readings were detected in air monitoring

1200: Crew breaks for lunch —

1330: Crews continue morning activities. Crew #1 continues bulking cyanide containing alkaline liquids and sludges. Crew #2 continues bulking alkaline solids in vats. START Kane accompanied crews. No elevated HCN readings sporadically during activities. HCN ≤ 3.5 ppm. No sustained readings above 20 ppm —

1500: Crews break. —

1600: Crews return to work zones to continue activities —

1715 HCN clean up.

1730: Crew START Thomas offsite

104

Location Jackson MI Date 10/21/15

Project / Client Michigan Plating Mechanic Street site USEPA

0700: START Thomas onsite. Attended site safety Meeting. Todays activities will include: continue to bulk alkaline cyanide containing solids from vats, continue to bulk alkaline liquids to sludges. Crew may receive a new list for bulking flammable materials. ERRS RM to HSO are looking into increasing the Action Level for HCN to 5.0ppm over 5 minutes & OSHA PEL is 10 ppm, NIOSH REL = 4.7 ppm. (1)

0730: Crews prepare to enter work zone, Crew #1 will continue bulking alkaline liquids to sludge Crew #2 will continue bulking cyanide containing alkaline solids from vats. Crew #2 ~~continues bulking alkaline solids~~ (2) did not encounter any HCN exceedances. Crew #1 had cyanide exceedances with HCN > 2.0 (maximum HCN = 3.5) but not sustained readings above 2.0. Crew #2 continued to transfer Vat ~~V06~~ (3) V010. Crew #1 completed drum transfers. (4) Backnote: USCG moved Area RAE # 2 from the location at the perimeter of the building inside the work zone to document HCN levels were sustained longer than a few seconds on 10/20. Continued w/ RAE #2 inside on 10/21. (5)

Location Jackson MI Date 10/21/15

Project / Client Michigan Plating Mechanic Street Site USEPA

1000: Crew breaks. (6)

1100: Crew proceeds to re-enter work zone to continue morning activities. START & accompanied crew. Reported similar activities as first entry

1200: Crew breaks for lunch.

1330: Crews re-enter work zone to continue morning activities. (7)

Crew #1 continues bulking alkaline liquids to sludges. Crew #2 finished 2/3 compartments in Vat V010. 2 instances of HCN > 2.0 in area of crew #1. HCN once @ 3.5 ppm for several seconds. Crew exited the area and the readings on the drum returned to less than 2.0 ppm ≈ 0-0.5 ppm. (8)

1500: Crew breaks (9)

1600: ERRS generated a new list of 24 flammable materials. Crew has no more open top drums for solids transfer. Crew (10) is doing liquids from the flammable list. Composite 15. No elevated VOCs noted.

1715: Crew cleaning up for the day.

1730: START Thomas off site (11)

Location Jackson, MI Date 10/22/15

Project / Client Mulhaer Mechanic Street Site / USEM

0700: START Thomas onsite. Attended Site Safety Meeting. Today's activities include: Continue bulking cyanide containing solids from vats; continue bulking flammable liquids; Hazard categorization

0715: Calibrated MultiRAE Pro: ——(1)

O_2 = 18.0% H_2S = 10.0 LEL = 4% CO = 50 ——(2)

HCN = 10.0 VOCs = 10.0 ppm ——(3)

0730: Crews prepare to enter the work zone. START have accompanied crew. Crew #1 continues bulking flammable liquids into drums. Crew #2 continues bulking cyanide containing alkaline solids in vats.

0750: Calibrated ERES MultiRAE Lite ——(4)

H_2S = 10.1 LEL = 48 CO = 49 VOCs = 100 ppm

0830: Crew #2 is transferring liquid in Vat VOO9 HCN between 3.0 - 6.5 ppm. Crews may have to transfer vat VOO9 in Level B ppe ——(5)

1000: crew breaks ——(6)

1100: Crews return to morning activities. Crew #1 enters work zone in Level C ppe to continue bulking out flammable liquids to sludge. Crew #2 enters work zone in Level B ppe to continue bulking Cyanide containing alkaline solids in the vats. Crew is on Vat VOO9. VOCs ≈ 1000 ppm after drum is opened initially. VOCs fall to about 50-100 ppm after

Project / Client Mulhaer Plating Mechanic Street Site

drums are open for a while. OSC requested ERES to put vermiculite in drums to stage upside down overnight after emptying to set any remaining material out after emptying.

Backup: Chemist is back onsite to continue hazard categorization ——(7)

1200 Crew breaks for lunch. ——(8)

1320: Crew received 25 cubic yard boxes for waste bulking. ——(9)

1330: Crews prepare to re-enter the work zone to continue the mornings activities. Crew #1 will continue bulking flammable liquids to sludge in Level C ppe. Crew #2 will continue bulking cyanide solids from vats in Level B ppe. USCG to START have accompanied crews. ——(10)

1430: conducted a perimeter walk around the site w/ MultiRAE. START was able to smell paint-like odor along the eastern boundary, but VOCs = 0 ppm. NO parameters above background levels, i.e. small hits of VOCs, H_2S along Ganson Road due to road traffic.

1500: Crew breaks. ——(11)

1600 Crews re-enter the work zone to

Location: Jackson MI Date: 10/22/15

Project / Client: Michner Plating Mechanic Street Site / USEPA

continue the mornings activities. Crew #1 will continue bulking flammable liquids. Crew #2 will continue bulking cyanide containing solids in vats. Crew completed vat work w/ high HCN levels so Crew #2 will enter workzone in level C PPE to begin the next vat. HCN levels = 0 ppm during work activities for Crew #2 during bulking. Crew #1 almost complete w/ bulking list #14 (flammable liquids). Crew #~~2~~ 1 did not encounter any levels for VOCs > Action Levels

1715: Crew cleaning up.

1730: START Thomas offsite.

Location: Jackson, MI Date: 10/23/15

Project / Client: Michner Plating Mechanic Street Site / USEPA

0700: START Thomas onsite. Attended site Safety meeting. Today's activities will include: continuing to bulk cyanide solids in vats; continue bulking flammable liquids & sludges; continue hazard categorization of samples.

0710: Calibrated MultiRAE pro:
O_2 = 18.0, LEL = 49, CO = 51, H_2S = [illegible]
HCN = 10.0 VOCs = 10.18

0730: Crews prepare to enter work zones for the day's activities. Crew #1 will finish flammables list (composite 5). Crew #2 will continue bulking cyanide solids in vats in Level C PPE. Crew #2 in Level C PPE. START will continue to monitor the area to determine if crew will upgrade to level B PPE.

0830: Conducted a walk around the site perimeter w/ USCG and EPA Keith Lesniak. No elevated readings observed on the site perimeter.

0930: ERRS will ~~start~~ get a new bulking list from chemist this morning.

1000: Crew breaks.

1100: Crew returns to morning activities. Crews completing activities in Level C PPE.

110

Location Jackson, MI Date 10/23/15

Project / Client Michwr Plating Mechanic Street Site/ USEPA

Crew # 1 completed Comp # 15, and began bulking flammable liquids & sludges in Comp # 16. Crew # 2 continues bulking cyanide contaminated solids from vats.

No elevated HCN readings in the breathing zone for Crew # 2 while bulking cyanide solids. Highest HCN readings at 1.0 ppm. VOCs were below 5.0 ppm throughout activities with cyanide solids.

1200: Crew breaks for lunch.

1330: Crew enters work zone to continue ongoing activities. ST ACT has accompanied crews. Crew # 1 continued bulking flammable liquids to solids. Crew # 2 continues bulking cyanide solids.

1430: Conducted perimeter walkaround the site. No elevated readings detected outside the building.

1500: Crews break.

1600: Crews return to work zones to continue activities. Crew # 1 completed all flammables on Comp List #15 except Drum 055. Drum is located with high cyanide drums. Site crew will retrieve this drum in Level B PPE on Monday.

1700: Crews cleaning up for the day.

1730: ST ACT Thomas off site.

Location Jackson, MI Date 10/26/15

Project / Client Michwr Plating Mechanic Street Site/ USEPA

0700: ST ACT Thomas onsite. Attended site safety meeting. Todays activities included continue bulking cyanide solids from vats; continue bulking flammable liquids and sludges in Comp # 15; begin new bulking list; continue hazcat characterizing samples.

0715: Calibrated MultiRAE Pro: O_2 = 18.0, LEL = 4%, H2S = 10.0 CO = 50 HCN = 10.0 VOCs = 0.0 ppm

0730: Crews prepare to enter work zone to continue day's activities. Crew # 1 will finish Comp # 15 flammable liquids and sludge. Crew # 2 to continue bulking cyanide solids. Both crews don Level C PPE.

0830: Crew # 1 dons Level B PPE to retrieve drum 055 from [redacted] area w/ cyanide containing drums that are covered with poly sheeting. USCG accompanied crew and reported no HCN levels in the area above 0.5 ppm. No HCN detected in the area where Crew # 2 is bulking cyanide solids.

0900: Crew # 1 completed Comp # 15. Starts gathering and staging containers on Comp # 16.

1000: Crew breaks.

1100: Crew reenters work zone to continue

Location Jackson, MI Date 10/26/15

Project / Client Muckner Plating Mechanic street Site / USEPA

Morning activities. Crew #1 ~~continues~~ received a new list (Comp #16) of neutral liquids and started bulking in a tote. Crew #2 continues bulking cyanide solids from vats. Crew #2 had one HCN exceedance directly after jackhammering the solid. HCN decreased to ~0.5-1.0 ppm following exceedance shortly after jackhammering finished and throughout the remainder of activities.

1200: Crew breaks for lunch

Backgate: Keith Lesniak brought EPA equipment onsite, i.e. hazmat ID, XRF, etc. to be used w/ hazcatting as needed.

1330: Crew reenters work zones to continue moving activities. Crew #1 is transferring liquids from Comp #16. Crew will transfer the solids/sludges after liquids are transferred. Crew #2 continues bulking ~~neutral~~ cyanide solids. No HCN exceedances were detected.

1420: EPA OSCs Kimble and new Manager, OSC conducted a walk through of the building to observe site operations.

1500: Crew breaks.

1600: Crew returns to work area.

Location Jackson, MI Date 10/26/15

Project / Client Muckner Plating Mechanic Street USEPA

1630: Attended Daily Work Order Meetings.

- Today's activities: Bulked flammable liquids & sludges
- Bulked neutral liquids
- No composites today.
- Chemists finished hazcatting and is compiling full list of wastestreams.

Tomorrow's: Chemist will compile full list of wastestreams.

1715: Crews cleaning up for the day. STAM Kane reported that Crew #1 finished neutral liquids list (Comp #17). Crew #2 finished or nearly finished vat VO14 and will move to VO15 tomorrow. No elevated readings detected in the breathing zone with air monitoring equipment.

1730: START Thomas off site.

114

Location Jackson, MI Date 10/27/15

Project / Client Michrv Plating Mechanic Street Site / USEPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities will include: continue bulking cyanide solids in vats; continue bulking neutral liquids; compile waste stream lists. Crews should be receiving poly drums for bulking alkaline wastes streams.

0715: Bump tested MultiRAE Pro O_2=18.6 CO=9 LEL=9 H_2S=6.5 HCN=7.0 VOCs=9.4

0730 Calibrated EBES MultiRAE Lite LEL=8.2, H_2S=11.4, CO=47 HCN=11.5 VOCs=19

0735: Crews prepare to enter workzones: Crew #2 will continue bulking cyanide solids from vats. Crew #1 is jackhammering alkaline solids in Comp #2 that were not previously transferred. START Kane accompanied the crew.

0745: EPA facilities walked and USCG completed walk around the site perimeter. Reported no elevated readings w/ monitoring equipment and no visible emissions exiting the building.

0930: Crew received a shipment of poly drums. (20 drums in the shipment).

Backnote: EPA Keith Lesniak mobbed the EPA owned XRF to Hazmat ID from EPA warehouse in Grosse Ile to be used w/ Haz cutting waste bypass

Location Jackson MI Date 10/27/15

Project / Client Michrv Plating Mechanic Street Site / USEPA

1000 - Crew breaks

1030: Crew reenters workzones to continue morning's activities. Crew #1 began finishing bulking flammable solids in Comp #2 which were not previously bulked. Crew #2 continues bulking cyanide solids. No HCN in wet area during bulking. VOCs exceeded 500 ppm during bulking of flammable solids for a few minutes multiple times, however, no exceedances over the action limit (500 ppm) for greater than 10 minutes.

1200. Crew breaks for lunch.

1330. Crew returns to work zones to continue morning activities. Crew #1 will finish bulking flammable solids from Comp #2. Crew #1 will finish bulking cyanide solids in vat V015. START Kane accompanied crew.

1500 - Crew breaks. START Kane reported no VOC or HCN exceedances. Crew #2 finished bulking flammable solids in Comp #2. Crew #1 began clearing out the northern room of the building preparing to bring on 2 roll off dumpsters to dispose empty drums

Location: Jackson, MI Date: 10/27/15

Project / Client: Michner Plating Mechanic Street Site USEPA

Crew # 2 finished vat V015, and will start on vats in the southern portion of the building.

1600: Crew prepares to enter work zone to continue activities. Crew # 1 will not complete any bulking instead, they will be cleaning (moving pallets, sweeping) to prepare to bring in 2 roll off drums for empty drums. Crew # 2 started bulking materials in the southern portion of the building and will begin bulking vat V035. Vats in this area are much smaller than the vats in the water treatment area. No HCN was detected during bulking of the vats. Crew # 2 completed bulking vat V035, in 1.5 yd³ boxes.

1700: Crews cleaning up for the day.

1730: START leaves off site.

Location: Jackson, MI Date: 10/28/15

Project / Client: Michner Plating Mechanic Street Site USEPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities will include: continue bulking cyanide solids from vats; begin Composite 10: Alkaline liquids & sludge. Weather: 45°F, 100% humidity; raining. EPA & START will observe conditions in the building to ensure no reactions due to rain water entering the damaged roof.

0715: Calibrated MultiRAE Pro: O_2=18.0, CO=50 LEL=99, H_2S=10.1, HCN=0.0, VOCs=9.75

0745: Crews enter the work zone. Crew #1 begins staging containers from Comp #10 in the bulking area. Crew # 2 bulking vat V034 in the eastern portion of the building. Observed several areas where water is entering the building in the southern most staging area, however all drums & containers in the area are covered with poly sheeting.

0900: Crew # 2 completed vat V034. No HCN was detected during bulking activities.

0915: Crew # 1 begins bulking alkaline liquids and sludge in Comp # 10. Crew is

Location Jackson, MI Date 10/28/15
Project / Client Michner Plating Mechanic Street Site / USEPA

liquids in a tote. No VOCs, HCN detected in the area. ~~Crew~~ While crew was pouring 5-gallon containers into totes, some small spills and splashing occurred. Crews used vermiculite to clean up the small spills.

0530: Small excavator delivered to site.

1000: Crew breaks

1100: Crews reenter work zone to continue activities. Crew #1 continued bulking alkaline liquids to sludges in Comp 10. Crew #2 continues bulking cyanide solids in vats. START Kane accompanied crew. Reported no elevated readings with air monitoring equipment.

1200: Crew breaks for lunch.

1330: Crew enters work zone to continue morning activities

1510: START Thomas offsite.

Location Jackson, MI Date 10/29/15
Project / Client Michner Plating Mechanic Street Site / USEPA

1300: START Thomas onsite. START Kane reports that crew received 20 cu ~~ds~~ topped drums (poly) for bulking alkaline solids. Crews continued bulking alkaline liquids to sludges in Comp #1 and cyanide solids. Crew finished most accessible vats and scraped remaining material from the sides of the vats

1330: Crew preparing to reenter work zone to continue morning activities. Crew #1 bulking alkaline sludges; crew #2 is sweeping the vat area and scraping material from the inside of the finished vats

1410: USCG enters work zone with a new pump to try and transfer contents of acidic tote to a new tote

1500: Crews break

1600: Crew reenters work zone to continue activities. Crew #1 will continue bulking alkaline sludges.

Backnote: USCG was unable to pump the acidic liquid into the new tote b/c the totes onsite are not rated for transfer of such a concentrated nitric acid liquid.

1630: Attended Daily ~~Safety Meeting~~ Work Order Meeting.

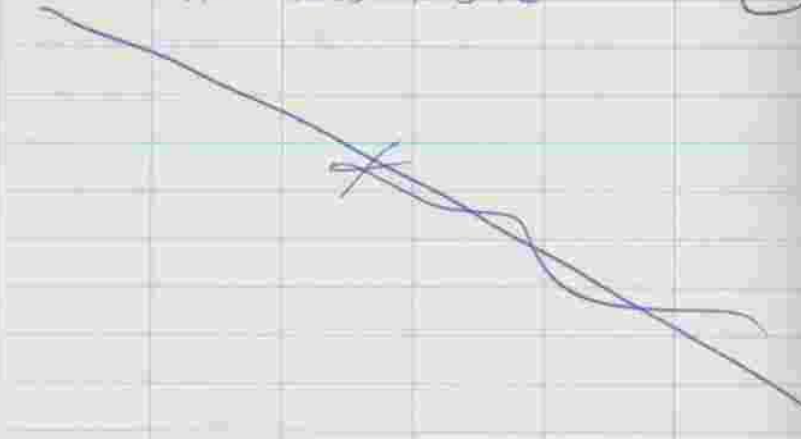
Location Jackson, MI Date 10/29/15

Project / Client Michner Plating Mechanic Street site USEPA

- Finished Comp 10 of alkaline liquids & sludges (11)
- Waiting to knock over vat 038 to transfer to bulk yard boxes. (12)
- ERLS received tubing for a small pump to make liquids from drums to new containers. ERLS will also use USCG pump to transfer liquids (13)
- Tomorrow, crew will start (14) a new composite of neutral liquids (15)
- Roll off box will be onsite for hazardous waste materials ie used, empty drums (16)

1715: Crews cleaning up for the day. (17)

1730: START Thomas off site (18)



Location Jackson, MI Date 10/30/15

Project / Client Michner Plating Mechanic Street site USEPA

0700: START Thomas onsite Today's activities will include: continue bulking cyanide solids in vats, (11) Begin bulking neutral liquids in comp 8, chemist will make composites of matched materials to cyanide solids from vats; two roll off dumpsters will be delivered for disposing empty drums. (12)

0715: Calibrated multiRAE Pro. (13)

LEL=46 O_2=19.0, H_2S=10.1, CO=50, (14)

HCN=10.0 VOCs=10.180 (15)

0730: Crew enters work zone to begin activities. Crew #1 is gathering containers of neutral liquids for comp #8; crew #3 is bulking cyanide solids in drums (16)

0800: Crew #2 uses small excavator to break open vat 038 to get the contents out and bulked. Crew #1 is using USCG pump to transfer liquids from drums to vac tote. Crew has 2 drums with very viscous liquid. Pump is working very slowly to transfer due to viscosity.

0900: One roll-away dumpster is onsite and staged outside the northern bay doors.

1000 crew break. Crew #3 finished on vat

1100: Crew enters work zone to continue activities

Location Jackson, MI Date 10/30/15

Project / Client Michael Plating Market Street Site / USEPA

Crew # 1 continues bulking neutral liquids in Comp # 8. Crew # 2 continues bulking cyanide solids. Crew is using the small excavator to break vats open and dump material onto plastic sheeting on the floor, then shoveling the material into cubic yard boxes.

1200: Crew breaks for lunch.

1300: Crew preparing to enter workzones to continue moving activities. Crew # 1 finished neutral liquids bulking list. Crew # 2 is almost finished transferring one vat.

1500: Crew break

1600: Crews re-enter workzone. Crew # 1 will clean bulking area to begin staging containers from neutral bulking list: Comp # 5 - Alkaline solids w/ cyanide. Crew # 2 finishing cleaning up vat area.

1700: Crews cleaning up for the day.

1730: START Thomas off site.

Location Jackson MI Date 11/2/15

Project / Client Michael Plating Market Street Site / USEPA

0700: START Thomas on site. Attended site safety meeting. Today's activities include: Begin bulking alkaline solids with cyanide drums in Composite 5.; continue bulking cyanide solids in vats; begin cutting and loading poly drums into the roll off dumpster.

0715: Calibrated Multi RAE Pro.:
LEL = 48, O_2 = 18.0, H_2S = 10.0, CO = 50
HCN = 10.0 VOCs = 10.6 ppm

0745: Crews prepared to enter work zone. Crew # 1 is staging drums in Comp # 5 to begin transferring into cubic yard boxes. Crew # 2 is transferring solids from vat 1047 which is in the southern portion of the building next to the CEC, into cubic yard boxes. Crew # 3 begins cutting and disposing empty poly drums.

0900: Crew # 2 is getting HCN readings of 1.0 - 5.0 ppm sustained during bulking activities. ERLS previously made a choice to the HASP increasing the Level B Action Level for HCN to 5.0 ppm (half the OSHA PEL of 10.0). No significant air monitoring readings for Crews # 1 or # 3 activities.

Location: Jackson, MI Date: 11/2/15

Project / Client: Michner Plating - Mechanic Street S/C/ USEPA

1000: Crews break

1100: Crews reenter work zones to continue activities. Crew noticed an ammonia odor in the CRZ upon entering the work zone but no one had any breakthrough of the odor while wearing respirator. USCG smelled a strong odor in the CRZ, and stopped work and brought all ERLS personnel out of the work zones. START placed a H_2S sensor into the mobile lab, fresh air calibrated the unit, and entered the work zone. H_2S = 0ppm. Odor appears to be from vat V047, which crews are transferring. ERLS entered work zone w/ pH paper, which indicated the vapor from the vat was weakly caustic. Odor was probably NH_3 ~~Tetrafoch~~ ERLS collected a sample of the material in the vat to be analyzed w/ the HazMat ID by ERLS Chemist.

1130: Crews reentered the work zone in Level C PPE. Action limit of 5ppm will be enforced for VOCs due to potential for ammonia. ERLS chemist used the EPA haz mat ID to test the solid powder. The powder was identified as H_2O_2.

Location: Jackson, MI Date: 11/2/15

Project / Client: Michner Plating - Mechanic Street S/C/ USEPA

1200: Crew breaks for lunch.

13300: Crew reentered work zones to continue removing activities. Crew #2 continues taking solids from vat V047. VOC readings in the breathing zone btn 1.0 - 4.0 ppm. No elevated readings in the breathing zone above unknown VOC AL. No elevated levels in other areas with the crew.

1500: Crew breaks.

1630: Today's activities:

- Completed vat V047 in 8 yd^3 box
- will finish Comp #5 tomorrow
- Started cutting drums and loading into roll-off dumpster.
- HazMat ID'd ~~Copper~~ solid material from vat V047. Reported as H_2O_2 and an ammonia iodide.

1515: Crews cleaning up for the day. Will continue transferring of Comp #4 tomorrow. Complete vat V047.

1530: START Things off site.

Location Jackson, MS Date 11/3/15

Project / Client Michaud Plating - Mechanic Street Site/ USEPA

0700: STRet Thomas onsite. Attended Site Safety meeting. Today's activities will include: Begin bulking neutral liquids in composite 18", continue bulking cyanide solids in vats.

0715: Bump tested EREs HCN Monitors. HCN #1: HCN=10.0 #2: HCN=10.0

0720: Calibrated ERES MultiRAE ~~Pro~~ Plus: H_2S = 10.1, LEL=44 CO=51 HCN=10.5 VOCs=100

0730: Crews prepare to enter the work zone. Crew #1 will begin bulking Comp #18 (neutral liquids). Crew #2 continues bulking cyanide solids in vats. Crew #3 is cutting poly drums that have already been transferred, and loading into the roll off dumpster. EDA Lesniak accompanies crews. Reported not elevated air monitoring levels during activities.

1000: Crews break

1045: Crews reenter work zone. Crew #1 continues bulking neutral liquids. Crews using US6 automatic pump to transfer liquids into parent tote. Crew #2 is scrapping vats and transferring cyanide material into a parent drum. ~~Two~~ To drums forward VO24, Crew #2 had to go into the vat and shovel the material. No elevated air monitoring levels and O2 = 20.9 inside the vat.

Crew #3 collected 2 samples from each container in Comp 17 which has already been bulked.

1200 Crew breaks for lunch.

1330: Crews prepare to enter work zone to continue many activities.

Crew is out of ~~250-gallon poly tote~~ ~~50~~ yd³ boxes so crew cannot continue bulking cyanide ~~solids~~ solids from vats.

1500: Crew breaks.

1545: Crews reenter work zone to continue activities. Crew #1 finishes neutral liquids comp list. Crew #1 moves drums to open space to begin bulking acids from Crew #1 is also moving pallets of plastic plating instruments to from the staging area to the roll off area. Crew #2 is cutting drums & loading into roll-off.

1715: Crews Cleaning up for the day.

1730: STRet Thomas off site.

Location Jackson, MI Date 11/3/15

Project / Client Michaud Plating - Mechanic Street Site/ USEPA

Location Jackson, MI Date 11/4/15
Project / Client Michner Plating - Mechanic Street Site
USEPA

0700: START Thomas onsite. Attended site Safety meeting. Todays activities include: begin bulking acids; continue bulking cyanide solids from vats; crew will receive yd³ boxes for bulking cyanide solids. Safety considerations for bulking activities included taping seams & points of entry, wearing green outer gloves, not standing over the tote opening; watching for reactions (bubbling and heat); mixing materials slowly.

0715: Bump tested MultiRAE Pro.
O_2 = 18.0 CO = 34 H_2S = 16.7, LEL = 48
HCN = 11.0 VOCS = 9.41.

0730: Crews prepare to enter the work zone to begin activities. Early morning activities will include gathering containers to move into bulking area.

1630: Attended Daily Work Order Meeting.
- Completed Acid consolidation of AB1
- Completed Alkaline Solids in Comp 5
- Filled first roll-off dumpster with cut empty drums.
- Crew covered the empty acid drums with poly sheeting to stop vapors.

Location Jackson, MI Date 11/4/15
Project / Client Michner Plating - Mechanic St Site
USEPA

- One crew will begin containerizing floor sweepings. Chemist will grab a sample of the material to determine which waste [illegible] the floor sweepings will be a part of.
- Crew will bulk acids in a different area going forward. HCN maxed at ≈100ppm during mixing.

1715: Crews cleaning up for the day.

1730: START Thomas off site

130

Location: Jackson, MI Date: 11/5/15

Project / Client: Michaer Plating Mechanic Street SITE/ USEPA

0700: START Thomas onsite. Attended site safety meeting. Todays activities will include: bulking alkaline solids; continue bulking cyanide solids from vats; begin sweeping floor sweepings in the area on the west side of the building. (#1)

0710 Calibrated new START MultiRAE Lite O_2=18.0, CO=51, HCN=10, VOCs=100. LEL could not be calibrated. START will trouble shoot the unit. (#2)

0720 Calibrated Fells MultiRAE Lite (#3) LEL=49, H_2S=10.0, CO=51, HCN=100 VOCs=135

0730: Bumptested MultiRAE pro: (#4) O_2=18 CO=33, H_2S=9.7, LEL=41 HCN=11 VOCs=8.14 Bumptest passed (#5)

0745: Crews prepare to enter work zone to begin activities. Crew #1 will be gathering and staging containers in Composite 6: Alkaline solids. Crew #2 will continue cutting poly drums and loading into the roll-off dumpster, Crew #3 is sweeping floors in the staging area. (#6)

1000: Crews break. Attempted to calibrate the new MultiRAE Lite for LEL but could

Location: Jackson, MI Date: 11/5/15

Project / Client: Michaer Plating Mechanic Street SITE/ USEPA

START attempted to calibrate the unit using various calibration gases to no avail. (#7)

1045: Crews reenter the work zone to conti activities. No elevated readings with air monitoring equipment. (#8)

1300 Crew breaks for lunch.

1330: Crews continue waring activities. Cre #1 continues bulking alkaline solids in Composite, No elevated readings det Crew #3 continues cutting empty drums plastic containers. (#9)

1500: Crew breaks.

1630: Attended daily work Order Meeting -Crew bulking alkaline solids not Cyanide containing drums (#10) -Crew continued loading cut drum into roll-off dumpster (#11)

1715: Crews cleaning up for the day. Crew continued with waring operations. Crew # 1 wi continue with alkaline solids bulking groups No air monitoring readings during activities.

1730: START Thomas off site

132

Location: Jackson, MI Date: 11/6/15

Project / Client: Michner Plating, Mechanic Street Site / US EPA

0700: START thomas onsite. Attended Site safety Meeting. Today's activities will include: continue bulking alkaline solids; continue cutting empty poly drums and plating baskets to loading into roll-off dumpster.

0715: Calibrated MULTIRAE ~~Lite~~ PRO

O_2=17.9, CO=51, H_2S=10.2, HCN=10.0

VOCS = 10.15

Having trouble calibrating LEL on monitor.

0730: Calibrated MULTIRAE Plus:

O_2=20.9, ~~CO=50~~ H_2S=10.1 HCN=100

VOCs = 101 LEL=50

0745: Crews prepare to enter work zone. Crews will continue bulking alkaline solids not containing cyanide & cutting and loading empty poly drums. EPA CES not accompanied crew. Noted no elevated air monitoring readings during activities. Crew # 1 finished bulking Comp 6 (alkaline solids) and began bulking group 6A.

1000: Crew breaks

1030: Crew returns to work zone. Crew # 1 is gathering and staging containers from Comp 6A in the bulking area. Crew # 2 continues cutting and loading poly drums in the roll-off dumpster.

Location: Jackson, MI Date: 11/6/15

Project / Client: Michner Plating, Mechanic Street Site / US EPA

1300: Crew breaks for lunch.

1330: Crews prepare to reenter work zone. Crew # 1 begins bulking containers from Comp 6A. Crew # 2 finished loading cut drums into roll-off dumpster. Roll off is full. Crew # 2 is now sweeping in the northwestern room.

1500: ERLS performed on emergency drum. Crew sounded the air horn signaling an emergency. Crews exited the exclusion zone and gathered in the muster point.

1530: Crews reentered the work zone to continue activities.

Crew # 1 continued bulking non-cyanide containing alkaline solids. Crew # 2 finished filling the second roll-away dumpster, covered the dumpster with poly and staged outside. Crew # 2 began sweeping in the northern room.

1700: Crews cleaning up for the day.

1730: STOP Thomas off site.

134

Location Jackson, MI Date 4/9/2015

Project / Client Michner plating Mechanic steel site / USEPA

0700: START Thomas onsite. Attended site safety meeting. Today's activities will include continue bulking non-cyanide alkaline solids, sweeping in the northern rooms.

0710: Calibrated ERES HCN monitors: #1 HCN = 10.0 #2 HCN = 10.0

0730: Calibrated MULTIRAE PLUS. CO = 50 H_2S = 10.1 LEL = 50 VOCs = 99.8 HCN = 10.0

0730: Calibrated ERES MULTIRAE LITE: O_2 = 20.9 H_2S = 10.2 LEL = 48 VOCs = 100 HCN = 10.0

0740: Crews preparing to enter the work zone. Crew #1 is completing Comp 6 load 641 with non-cyanide alkaline liquids. Crew #2 is sweeping and collecting floor sweepings from the northern buildings. Crews will gather floor sweepings in poles to sample them at a later date.

1000: Crews break. ~~Crew #1 has~~

1030: Crews prepare to enter work zones. Crew #1 donned Level B ppe to retrieve the last drum from Comp 6 (which is under poly with the high HCN drums). Crews completed bulking this drum in level B ppe. HCN readings

Location Jackson MI Date 4/9/15

Project / Client Michner Plating Mechanic Steel Site / USEPA

= 0 ppm throughout activities. Crew finish with comp #6. Crew cleans up the bulking 1200: Crews break for lunch. Crew will rec a new bulking list after lunch.

1300: Crews enter work zone. Crew #1 gathering the containers on the new bulk list (combustible liquids)

1630: Attended daily work order meet

- Crew continued bulking 3 cubic yard boxes w/ alkaline solids
- Crew completed 25 containers of combustible liquids
- Crew #2 Sweeping in the northern of the building, cutting drums, disposing plating baskets
- Crew will received 25 yd³ b
- Crew will complete bulking of sm bulking groups
- USC6 will show crew how to use a voltmeter to test groundings

1700: START Thomas offsite

Location Jackson MI Date 11/10/15

Project / Client Michigan Plating Mechanicsville Site / US EPA

0700 START Thomas on site. Attended site safety meeting. Today's activities will include finish bulking combustibles list; continue sweeping in the northern rooms and collecting / piling floor sweepings; start a new bulking list. Weather: 42°F; 53% Humidity, overcast; winds: 11 mph SE

0710: Calibrated ERLS HCN monitors:

#1 HCN = 10.0 #2 HCN = 10.0

0720: Calibrated ERLS MultiRAE Lite:

O2 = 10.1, LEL = 48, CO = 50, HCN = 10.0

VOCs = 100

0735: Crews prepare to enter work zone. EPA Lesniak accompanies crew. Crew #1 is finishing bulking ~~non-cyanide alkaline solids~~ combustibles in Comp #19. Crew #2 continues sweeping in the northern portions of the building.

0855: Crew # finished pumping liquids from combustibles drums in Comp #19. Crew still has 2 & drums from Comp #19 with sludges or solid. Crew does not have any open-topped drums to bulk the sludge and solid, so crew staged the remaining containers in the northern building and will return to these at a later date. Crew #2 is now staging containers in Comp #21, with flammable,

Location Jackson, MI Date 11/10/15

Project / Client

Alkaline cyanide containing materials. EPA Lesniak reported no elevated air monitoring readings during bulking of combustibles.

Backnote: USC6 used Multimeter to test that the containers being cut as needed were properly grounded. All containers that were cut open were found to be properly grounded.

1000: Crews break.

1030: Crews reenter work zone to continue morning's activities. Crew #1 completed 10 containers on Comp 21 with flammable alkaline cyanide containing materials. USC6 accompanied crews and reported high VOCs (up to 500 ppm), however VOC readings were not sustained in the breathing zone, and crews remained in Level C PPE.

1300: Crew breaks for lunch

1330: Crews reenter work zones to continue morning's activities. Crew #1 will begin gathering containers in Comp #7, neutral solids, and will begin bulking the materials. EPA Lesniak accompanied crews.

1345: Crew received cubic yard box and pallets for bulking solids

Location Jackson, MI Date 11/11/15

Project / Client Michner Plating Mechanic Street Site / USEPA

1500: Crew breaks. Crew #1 gathered 12 of the drums on the new composite list and staged in the bulking area. The crew completed bulking one of the containers. Crews will continue bulking the composite group following the break. —(14)

(18) EPA Lesniak reported no elevated air monitoring readings during the bulking activities —(14)

1530: Crews prep to enter the work zone to continue activities. USCG accompanies crew —(14)

1630: Attended daily work order meeting:

- Completed liquids (14) from combustibles to flammables and will complete sludges to solids tommorow once opentopped poly drums arrive onsite
- Tommorow crew will start on cyanide containing alkaline solids —(14)
- Crew also continued sweeping and scraping near the vats.

Location Jackson, MI Date 11-12-15

Project / Client Michner Plating RV (Mechanic St / U.S. EPA

0700 Hours - START Hanoe attends site Health & Safety & General Scope of work meeting. ERRS to continue with consolidation of alkaline solids (with cyanide) New Bulking list to be provided by ERRS (Composite 13) Continuation of general interior cleaning i.e. transfer of misc materials & crews about to conduct Floor sweeping and containerization & scraping resid. From troughs (started on 11-11-15)

0705 Hours - Present Weather = 53°F, wind SW 26mph, Gusts WSW 41 mph, Humidity 80%, BP 29.31" START to continue oversight & air monitoring (multiRAE) within exclusion zone as ERRS conduct RV activities. USCG to deploy AreaRAE units (3 total) 2 in Exclusion Zone & one in CRZ along with providing oversight and air monitoring within exclusion zone (i.e multiRAE)

0710 Hours - Fresh Air Calibration of MultiRAE Lite (U71352X) - All sensors Pass - HCN=0.0, CO=0, LEL=0, O_2=20.9, VOC=0

Location Jackson, MS Date 11-12-15 Cont.

Project / Client Michoud Plating, BV (Mechanic Street) / U.S. EPA

Fresh Air Calibrations of MultiRAE PLUS (U60847X) - all sensors pass - HCN = 0, VOC = 0.0, H_2S = 0, LEL = 0, O_2 = 20.9 %
Fresh Air Calibrations of ERRS MultiRAE (SF-MRAE-03) - all sensors pass - HCN = 0.0 ppm CO = 0, LEL = 0, H_2S = 0.0, VOC = 0 ppm
0730 Hours - START Kane calibrates ERRS Personal HCN monitors 3615-Z028752 & 3615-Z027849 Both auto zero, Both pass calibrations (10.0 ppm)
EPA Rep Keith Lesniak to conduct oversight & air monitoring within exclusion zone as ERRS conducts BV activities
1000 Hours - K. Lesniak & ERRS exit exclusion zone
1035 Hours - START Kane conducts oversight & air monitoring within exclusion zone
1040 Hours - Transfer of contents from Drum #979 utilizing mini-excavator, manual shoveling into cubic yard tote bag (two techs & Foreman)
1055 Hours - 3 more ERRS techs enter exclusion zone, will conduct floor sweeping activities in 1st and 2nd main rooms past & CAZ
1117 Hours - 4 techs exit exclusion zone to assist in unloading shipment of steel & poly drums
1130 Hours: 4 techs return to exclusion zone,

Location Jackson, MS Date 11-12-15 Cont.

Project / Client Michoud Plating, BV (Mechanic St) / U.S. EPA

OSC Kimble & USCG Rep also in exclusion zo
2 techs in first main room (western end) Floor sweeping, moving misc. debris to acces various areas, trough scraping & transfer Floor sweepings; Two Techs collecting & transferring misc. drum debris (i.e. lids, portions of rusted barrels, empty drums, drum rings & wood pallets (impacted)
1200 Hours START Kane & USCG exit exclusio zone, drum consolidations number summa as follows: 979, 976, 977, 978, 956 and portions of 957 (will carry over to 1330 en
1330 Hours - USCG rep to conduct oversight air monitoring within exclusion zone a ERRS continues consolidation activities and Floor sweeping, debris transfer
1500 Hours - ERRS & USCG exit exclusion zone
1530 Hours - USCG Rep to conduct oversight & air monitoring (multiRAE) within exclusio zone as ERRS continues BV activities (reference USCG ICS-214 Form for details
1630 Hours - START Kane, USCG Rep, ERRS am ERRS Foreman, OSC Kimble - Daily work order meeting (reference DWO for complete details)

Location: Jackson, MI Date: 11-12-15 Cont.

Project / Client: Michwer Plating, RV (Mechanic St) / U.S. EPA

Main Concern: Begin T+A procedures week of 11-16-15. 1700 Hours (approx) meeting over USCG + EPRS exit exclusion zone (1700 H)

1730 Hours: START Home off site

SMK 11-12-15

Location: Jackson, MI Date: 11-13-15

Project / Client: Michwer Plating, RV (Mechanic Stre

U.S EPA

0700 Hours - START Home attendes Site Health + Safety meeting - Main Topic: Proper Hygiene + Biological Pathogens

0710 Hours - Present Weather: 40°F, winds NW 20 mph, Gusts WNW 37 mph, Humidity 73%, BP = 29.77". Fresh Air Calibrations MultiRAE 095-327095: HCN=0, VOC=0.0, H_2S=0, LEL=0, O_2=20.9

0715 Hours - Calibrations (Full) of EPRS personal HCN Detectors 3615-2027552 & 3615-2027549 Both autozero + Both pass calibrations at 10.0 ppm HCN (next CAL Date = 29 days low Alarm = 4.7 ppm + High alarm = 30.0 ppm)

0730 Hours - Fresh Air Calibrations of EPRS multiRAE (SF-MRAE-03) HCN=0, CO=0, LEL=0, H_2S=0.0, VOC=0 Fresh air calibration of MultiRAE (U7135ZX) HCN=0, CO=0, LEL=0 O_2=20.9, VOC=0 EPA Rep Keith Lesniak to conduct oversight + air monitoring as EPRS continues consolidations (multiple waste streams projected) and floor sweeping/scrap Debris transfer + staging within Exclusion Zone (USCG to periodically support)

Location Jackson, MI Date 11-13-15 Cont.

Project / Client Michwest Plating, BV (Mechanic St) / U.S. EPA

1000 Hours- ERRS + USCG exit exclusion zone

Backnote 0930 Hours- USCG rep enters exclusion zone to conduct oversight + air monitoring

Backnote 0930 Hours - EPA Rep Keith Lesniak exits exclusion zone — SK

1030 Hours- EPA Rep Keith Lesniak enters — SK

exclusion zone to conduct oversight + air — SK

monitoring. Backnote 0700 Hours - START Kane drafting PowerPoint Presentations — SK

1200 Hours- EPA Rep Keith Lesniak + USCG exit exclusion zone with ERRS —

1330 Hours- USCG Rep to conduct oversight + air monitoring within exclusion zone as ERRS continues Removal Activities (consolidations of waste streams, Floor sweeping + containerizations misc. debris transfer to access Floor. EPA Rep Keith Lesniak and USCG rep to conduct perimeter air monitoring survey (exterior of site boiling)

1500 Hours - USCG Rep + ERRS Exit Exclusion Zone

1530 Hours - USCG Rep + ERRS prepare to enter exclusion zone. ERRS to continue Removal activities (as previously stated) USCG to conduct oversight and air monitoring within exclusion zone and in immediate vicinity of ERRS activities

Location Jackson, MI Date 11-13-15 Cont.

Project / Client Michwest Plating, BV (Mechanic St) / U.S. EPA